5956

ESTIMATES OF CAPABILITIES

of the

UNITED STATES COMBAT FORCES IN-BEING

1 September 1951

NOTICE

The Estimate of Capabilities of the U. S. Combat Forces In-being as of 1 September 1951 is the result of 99 man-weeks of work spread over 10 weeks, 25 June - 1 September 1951. The Research Staff consisted of 17 individuals [redacted] 25X1A

Biology	1	History	8
Chemistry	2	Mathematics	1
Classics	3	Physics	1
English	1		

Although eleven of the staff were in the Armed Forces during World War II, none was in a strategic echelon; and those in Intelligence units were concerned with Tactical rather than Strategic Intelligence. Therefore, the resulting product must be considered the work of laymen and not professionals in either Military Strategy or Strategic Intelligence. The conclusions, which we hope to be reasonable ones supported by the evidence presented, must be considered the products of amateurs and not professional Intelligence Analysts.

Furthermore, only unclassified materials were used and only 10 weeks available to search them. Few materials back of 1 May 1951 were examined and numerous other sources were not touched, e.g., local newspapers of Navy ports and cities near Army and Air Force installations. The Intelligence Office of a foreign power using this research technique presumably would have been at work much longer, with a larger staff, covering more materials.

Finally, the Intelligence Office of a foreign power would have data collected through an Espionage System with which to supplement the data here presented, notably on such matters as aircraft and armament production and

Approved For Release 2004/07/28 : CIA-RDP79R00971A000300020002-0
CONFIDENTIAL

perhaps research and development projects. Therefore, the estimates made and the conclusions reached must be taken as the minimum of information on U. S. capabilities available to a foreign nation's Intelligence Office.

Table of Contents

25X1

25X1

SECTION I

GENERAL SUMMARY

2

U. S. ARMY

[Section II Below]

The U. S. Army is at present in a state of partial mobilization, consequent upon the outbreak of hostilities in Korea in June, 1950. Its present strength is close to the authorized cieling of 1,550,000 men. This force now includes 16 fully organized divisions, 6 of which are in action in Korea, 2 in Japan, 3 in Germany (in addition to the U.S. Constabulary), and 5 in the Zone of the Interior; two of these last have been alerted for movement to Germany in the near future. In addition to these 16 active divisions, there are 12 training divisions in the United States. Plans call for the formation of a total of at least 18 and possibly 22 active divisions and 18 Regimental Combat Teams by 30 June, 1952. Including the Constabulary, this will be equivalent to a force of 25 to 29 combat divisions.

Present forces are equipped with sufficient supplies and weapons for purposes of training and for the conduct of limited operations such as that in Korea. Most equipment, however, is of World War II types. Only limited use of newly designed equipment - notably the 3.5 bazooka - has been made in Korea. The T-46 medium tank, one batallion of which is in action, is a post-World War II model, but has already been superseded in production by the improved T-47 model. Large orders for production of new equipment are now being placed. For example, it appears that approximately 5,000 T-47 tanks have been ordered under 1951 appropriations. But delivery of much of the equipment now on order will not take place for a year or more. What has so far been accomplished is creation of a production base rather than production of available equipment.

U.S. troops now engaged in action in Korea are almost as numerous as all U. S. troops in combat one year after Pearl Harbor. Total military supplies

shipped to the theater of operations in Korea during the first 12 months of hostilities amounted to 10,278,000 measurement tons, as compared with 9,984,000 tons to all theaters in the same period after Pearl Harbor.

The Army is in a position to fulfill adequately its present commitments, but not materially to increase them. In the Far East the forces under General Ridgeway's command are the maximum which can be supported logistically in Korea and are fully capable of carrying on the type of defensive and limited offensive campaign to which they are committed. There appears to be no disposition to attempt again an advance to the northern borders of Korea; manpower is not available to defend the greatly extended front which would then be created. When the 28th and 43rd Divisions join the occupation troops in Germany, the six divisions promised for that function will be complete. A strategic reserve of only 3 trained divisions will then remain in continental United States.

Any considerable fresh military commitments for the use of U.S. ground forces will require further decisive movement toward full mobilization. The rate of production of military equipment will probably not make such a step feasible before the summer of 1952.

U. S. NAVY

[Section III Below]

The Navy has on board at present approximately 755,000 officers and men, the Marines 194,000. Current plans call for Navy to increase by mid-1952 to 805,000, for the Marines to decrease to 176,000, though pending legislation proposes a Marine force of not less than 300,000 or more than 400,000.

There are approximately 1,050 ships in the active fleet, of which 400 have been demothballed since June, 1950. In the reserve fleets are about 1,770 ships (the Atlantic Reserve Fleet contains 305 major combatant units,

the Pacific Reserve Fleet 296), and roughly 100 are assigned to Naval Reserve Training.

The major combatant units in the active Atlantic Fleet are 3 CVB, 2 CV, 4 CVL, 7 CVE, 2 BB, 7 CA, 2 CL, 101 DD of all types, 6 DE, 49 SS. The Sixth Fleet is the only major operating force.

The major combatant units in the active Pacific Fleet are 8 CV, 1 CVL, 6 CVE, 2 BB, 6 CA, 2 CL, 87 DD of all types, 12 DE, 27 PF, 34 SS. The Seventh Fleet and Naval Forces Far East are the major operating forces.

The most important items in the conversion of ships for combat dury are the strengthening of carriers to handle heavier aircraft, modification of DDs to DDEs, and "Guppy" conversions of SS.

Regular Navy and Marine Corps aircraft number about 6,600; the principle types now in use by combatant Naval and Marine forces are: 1) Fighters: F9F, F7F(N), F4U, F2H; 2) Attack Planes: AD, A2D, AJ1; 3) Carrier-based A/S Aircraft: AF2S, AF2W, TBM; 4) Patrol Planes: P2V, PBM, P4M, PB4Y2. In the active fleet at present are 14 carrier air groups and the following squadrons: 13 VS, 10 BC, 30 BP, 3 ZP, 18 VMF and VMF(N), 3 VMBF.

The fleet is still basically equipped with the weapons employed in World War II. Improvements in shipborne ordnance consist mainly of better automatic fire control and faster rates of fire. Important developments in rockets and sonic torpedoes have been announced. Guided missiles are still in the test and evaluation stage.

The Navy is greatly expanding facilities at many of its existing fleet bases. Funds have been appropriated for a new secret base in the Atlantic area, and negotiations are in progress for bases in Spain. Three new air stations are being constructed in the Far East, and the Navy is devoting large funds to developing facilities for jet airdraft at its existing air stations.

Undersea warfare has the highest priority in Naval planning. Since November, 1949, technological development, training, and expansion of forces for ASW have been greatly stepped up. Experiments are being made with submarines for novel purposes, and much effort is now going into such new projects as the nuclear-fission engine.

The Navy today is the most powerful afloat, able to defeat any other surface fleet in the world. At the same time, the active forces are capable of very great expansion. It is unlikely, however, that any war in the near future will see fleet actions similar to those fought in the Pacific from 1942-1945. Naval forces will be called upon primarily to launch and support large amphibious operations, and to protect both their own units and the merchant navy from air and submarine attack. For these purposes the active fleet is at the moment inadequate. The combatant units afloat appear sufficient only to execute a relatively small amphibious operation over any extended period of time. In other words, they constitute merely a good striking force, even though some naval aircraft may now be able to deliver the atomic bomb. AS forces are insufficient and will remain so for some time, despite the existing program for properly equipping small naval and coast guard ships.

The conclusion is inescapable then, that, owing probably to the state of public and congressional opinion rather than to the wishes of the Navy Department, the United States now possess what is fundamentally a peace-time Navy for a state with all the commitments that this country now has.

6

U.S. AIR FORCE

[Section IV Below]

Present Strength

87 combat wings. The 78 which have been identified are composed of 26 Bombardment, 39 Fighter and 13 Troop carrier. Total personnel: 787,000 (106,500 officers, 687,500 airmen). The total of first-line combat aircraft available is between 4,742 and 5,000 (bombers 677, fighters around 4,000); this means that the 26 Bomb. Wings are under strength and the Fighter Wings have less than a 1 to 1 replacement ratio. The Troop Carrier Wings are adequately supplied with aircraft.

Strength by July 1952.

8 more wings will be added by July 1, 1952 (but these will be combat-ready wings of 4 squadrons). Officer strength by July 1, 1952, will be 136,000, airmen 925,000. The 26 Bomb. Wings should be up to full strength and the complement of aircraft and the 39 Fighter Wings should have an adequate reserve. But the 95 wings which will then be in-being will not be fully equipped.

Capabilities, Strategic.

The AF undoubtedly has a sufficient supply of atomic bombs, the planes to get them over the target and the technique and instruments necessary for extremely accurate bombing. But it does not at present have enough planes to maintain a strategic offensive very long, if plane losses are even moderately high.

Tactical

The AF has no modern light bomber available in quantity. And its fighter-bomber strength is not at present adequate for the high attrition rate of operations against modern aircraft and ground fire.

Defense

General Vandenberg's recent estimate that the AF could destroy less than 30% of an attacking bomber force is confirmed by all available data. The AF does

not possess a fighter capable of effective combat performance at stratospheric levels, and the all-weather fighters needed for interception [F-94 and F-89] seem to be in short supply (of the 16 Fighter Wings identified as part of ADC one at least is flying F-51s and one is even operating with F-47s). The GOC is woefully under-manned; the radar screen for continental U.S. will be reasonably complete by the end of 1951 but not until next year for Alaska.

Deployment.

The main weakness is the lack of bases in Europe, where the AF cannot count on using bases in Germany in the event of an enemy offensive. It will have to rely on bases in England and the new bases being built in the Mediterranean. Work on the North African bases is being pushed and building is going on in Cyprus, Crete and Greece. But it is not likely that these new bases will be fit for SAC operations for some time to come. Bases in the Far East are adequate for present and probably for all future operations.

WEAPONS

[Section V Below]

Section V is primarily concerned with developments in the field of weapons and equipment which have taken place since World War II. Many weapons still being used by the armed forces are World War II models - the M1 rifle and the Sherman tank, for example. Detailed descriptions of the characteristics of such items of armament are readily available in The Army Almanac (Washington, 1950), and G. M. Barnes, Weapons of World War II (New York, 1947). Both Barnes and John E. Burchard (ed.), Rockets, Guns and Targets (Boston, 1948), contain information about the problems with which Ordnance and other experts were wrestling at the end of World War II. Many of these problems are still plaguing the weapons development program; but some of our most recent weapons are the

ELECTRONICS

[Section VI Below]

The development, during World War II, of very small radio tubes for use in proximity fuzes was widely extended. As a result, electronic equipment designed since World War II, while more flexible and efficient than the equipment it replaces, also is generally smaller and lighter.

At the same time, this equipment is designed as a small number of component units rather than a large number of individual parts. Now, if a radio set fails to function, a dozen or so components are tested, rather than a hundred tubes and an equally large number of resistors, condensers, etc. Due to its small size, it is economical, and of course much quicker, to replace the whole equipment. Maintenance of electronic equipment, which became a major problem toward the end of World War II, has thus been greatly simplified.

As a result of the research and development done since the end of

World War II, military electronic equipment has been developed which is of very high quality and variety. We are far ahead of any other country, except possibly for Great Britain, and we seem to lead her by a considerable extent. It should be noted that what we have are refinements of World War II equipments. Radically new devices, if any, have been well concealed.

Production, however, is a different matter. In the summer of 1951, production of this new electronic equipment was sufficient in most cases to allow its installation in new aircraft, tanks, ships, etc., but not enough to permit refitting of previously constructed units. On the other hand, by the end of 1951, retooling and construction of new factories will be largely completed, and by the end of 1952 large quantities of the new electronic equipment will be available.

25X1

25X1

Next 2 Page(s) In Document Exempt

Approved For Release 2004/07/28 : CIA-RDP79R00971A000300020002-0

SECTION II

THE ARMY

15

SECTION II

ARMY

CONTENTS

f 6

Section II. Army. Contents. (Cont.)

17

Section II. Army. Contents. (Cont.)

APPENDICES

12

SECTION II

U. S. ARMY

A. General

1. Mission.

The major missions of the U. S. Army as recently stated by the Chief of Staff, Gen. J. Lawton Collins, are

a. To maintain adequate forces in occupation areas and to maintain strategic oversea bases with a strength sufficient to meet extended emergencies, including armed aggression.

b. To aid in bringing the war in Korea to a successful conclusion while maintaining the security of Japan.

c. To develop a general reserve of sufficient size and readiness to provide for the security of the United States.

2. State of Mobilization.

In order to carry out these missions the Army began partial mobilization immediately after the outbreak of hostilities in Korea in June, 1950. The size of the Army was increased from 593,000 on 30 June, 1950 to approximately 1,531,200 on 30 June, 1951. According to official statements these forces are being organized to form 18 combat divisions and 18 regimental combat teams, in addition to the Constabulary in Germany. These will provide the equivalent of 25 combat divisions, together with necessary supporting units. Four additional divisions may be formed before 30 June, 1952, partly by calling to Federal service two additional National Guard divisions and partly by assigning a higher proportion of existing troops to service in divisions.

At present there are 16 divisions in the combat theater, combat-ready, or in final stages of training. Eight Army eivisions are in the Far East, including two [illegible] one

Marine division in Korea. Three divisions are in Germany in addition to the Constabulary, which is the equivalent of one division. Five active divisions are in the Zone of the Interior as general reserve; two of these are scheduled for movement to Germany before the end of the year. In addition to these 16 active divisions there are 12 training divisions in the Zone of the Interior.

There has been a corresponding increase in production of military supplies and in appropriations for the over-all needs of the Army. Appropriations for the Army increased from $4.4 billions in the fiscal year 1950 to $19.3 billions in fiscal 1951. For fiscal 1952 the Appropriations Committee of the House of Representatives have approved expenditures of $20.1 billions. This figure gives only a partial indication of foreseeable expenditure for 1952, since it does not include $1.4 billions requested for military construction, or the cost of continued combat in Korea which has been estimated at $7.0 billions.

3. Strategic Factors Governing Mobilization

Analysis of major emphasis in the Army budget for the fiscal year 1952 provides a key to certain fundamental factors in general strategic planning. The most striking aspect of the budget is the high proportion of total appropriations requested for major procurement and production. A comparison of expenditure for primary items in the budget for fiscal 1950 with the corresponding percentages projected for 1952 brings out the radical shift of emphasis in respect to procurement:

Object of Expenditures	Percentage of Appropriations	
	1950	1952
Personnel	40.1%	21.0%
Major Procurement and Production	6.2	45.6
Operations and Maintenance	29.8	25.7
All Other Functions	23.9	7.7

Most of the equipment to be provided by the 45.6% of 1952 appropriations devoted to major procurement and production will not be complete and available for use before the latter part of calendar 1952. $5.5 billions, or more than one quarter of the entire Army budget, are intended solely for tanks and combat and other vehicles, items which have a long production lead time -- the period intervening between placement of orders and delivery of finished goods. It may be concluded that present mobilization plans are based upon the following assumptions:

a. A major war is not to be expected in the immediate future. Emphasis is therefore being placed upon the creation and maintenance of a production base rather than upon all-out production for immediate use. It is the policy of the Army to encourage manufacturers to operate on a one shift basis, so that there will be a maximum number of plants with production lines in being, which can be put into round-the-clock operation when greater urgency is felt. The Army's Detroit Tank Arsenal, for example, is producing at less than one quarter of capacity, on a one shift basis.

b. War within two or three years is nevertheless so likely that tooling up and initial production of major ordnance and other equipment cannot safely be delayed. The heavy investment now being made in current models of such items as tanks will necessarily discourage radical changes in design for a considerable period in the future. An indication of a sense of urgency in production of equipment is provided by a recent relaxation in U. S. insistence on complete standardization of equipment with the Allies, although discussions are continuing on the .30 vs. .28 caliber rifle.

These conclusions are supported by the fact that the manpower level of the Army is to be kept unchanged for at least a year. The present size of t[illegible] armies

 21

before the first World War. It seems likely that this size will remain fairly constant unless there is a radical change in the international balance of power, which may be produced either by a spread of the Korean conflict which will lead to all-out mobilization, or by the development of European ground forces strong enough to provide an effective barrier to Soviet forces in Western Europe without permanent U. S. Army support.

4. Relation to Allied Ground Forces.

A basic factor in all Army planning is a recognition that the U. S. Army can never approach numerical equality with its probable enemy. A result of this fact is an emphasis on the building of a system of alliances, encouragement of the concept of a United Nations Army, development of a combined staff structure for the North Atlantic Treaty Organization, and the Mutual Defense Aid Program. Although the particulars of these matters lie beyond the scope of the present study, their importance in relation to U. S. Army strength is indicated by the advice of Secretary Marshall to the Senate Foreign Relations Committee, that reduction in U. S. military appropriations would be preferable to a cut in the sum requested for foreign arms aid. Marshall at the same time made American purpose clear when he stated (requesting that his words not be published) "We are proposing dollars to arm men other than our own men. We are contributing dollars rather than men, although we have made some sacrifices of our own in Korea. The other side [i.e., the European Allies] is thinking of men."

In pursuance of this policy, the United States has already sent over one billion dollars worth of equipment to its allies, including 4,500 tanks and combat vehicles, 2,900 major field artillery pieces, 19,000 general purpose vehicles, as well as small arms, ammunition, bazookas, and other items. For the most part deliveries have been made from

World War II stocks which are being replaced by new models for the Army's own use. Orders have, however, been placed for the new M-47 medium tank, to be shipped to the allies when produced.

5. Effects of Action in Korea.

The chief immediate effects of experience gained in Korea for Army planning and training have been the following:

a. Reaffirmation of the primary role of ground forces in warfare. In presenting to Congress the Army's 1952 appropriation request for Research and Development, Maj. Gen. Ward H. Maris (Chief, Research and Development Division, Office of the A.C. of S., G-4) stated that allocation of 66% of this budget to the Ordnance Corps "is consistent with the major combat role which must be assumed by ground troops in any war of the foreseeable future."

b. A tougher and longer training program, with more emphasis on physical conditioning, night fighting, and guerilla warfare.

c. Provision of large numbers of combat-experienced men to provide training cadres. At present 30,000 men are returning each month from the Far East to the Zone of the Interior. Preference in this rotation is given to combat troops. Senior officers, including divisional and corps commanders are also rotated after relatively short periods of command so that their experience can be utilized in training of fresh troops.

d. Greater emphasis on the need for air-ground cooperation. The efficiency of the Marine Corps in this field has been particularly noticed, but the need for general improvement is still apparent.

e. Testing of new arms and equipment. Noteworthy examples have been the 3.5 bazooka and the Patton medium-gun tank. The latter has shown its superiority to the Soviet T-34 tank by an 18-1 margin of victory in direct ... in early June were reported

as only 5 to the enemy's 90. The value of Korea as a proving ground has, however, been sharply limited by a policy of refraining from the use of new equipment unless there is real tactical need for its employment.

6. Capabilities.

The U. S. Army is not now in a position to assume commitments considerably greater than those it has already assumed.

The six Army divisions now committed to action in Korea, together with the two former National Guard divisions on occupation duty in Japan, form one half of the Army's trained divisions. Of the remaining eight divisions three are already in Germany and two more are scheduled to join them before the end of November. This will leave as strategic reserve in the Zone of the Interior only three divisions other than training divisions, namely the 1st Armored, 11th Airborne, and 82d Airborne. None of these three is likely to be sent overseas without extreme reluctance until additional National Guard divisions have been Federalized, brought up to full-strength, and given considerable training - a process which would require a minimum of 6-9 months. Gen. Collins has stated that the calling up of two additional Guard divisions is under discussion, but no decision has been announced. Although no dates have been revealed, two to five active divisions are eventually to be formed out of existing training divisions. It is possible that a speed-up in formation of one or more of these divisions might permit release of a combat-ready division for oversea duty somewhat sooner than the calling of a Guard division, but this is uncertain.

In addition to the three Army divisions which, subject to these qualifications, are available within the Zone of the Interior for active duty, it is believed that the 2d Marine Div., now stationed at Camp Lejeune, North

The force of one Marine and six Army Divisions now engaged in Korea is considered to be the maximum which can be logistically supported in view of the terrain and rail and road conditions in Korea. This force has shown itself capable of highly successful defensive and limited offensive action against the present enemy. From statements made at the MacArthur hearings, especially the tentative plans for evacuation at the time of the successful Chinese offensive of December, 1950, it appears highly probable that if the situation in Korea should again deteriorate severely, withdrawal from the peninsula is more likely than large reinforcement.

In Europe there has been a considerable strengthening of U. S. forces during recent months. This increase in strength is continuing, with the announced goal of 340,000 men in Europe by the end of 1952. This number will include the troops now in Europe, the 28th and 43d Divisions which have already been alerted for movement to Germany, and necessary corps, army, and other supporting troops. Although the end of 1952 is the projected date for fulfillment of this goal, almost all of the combat elements will be in Europe by 30 November, 1951; it seems probable that the remaining troops could be made available quickly, if the situation should make this necessary.

Other troops available from the Z.I. for European duty have been discussed above. If a decision should be made to withdraw from Korea, the bulk of the forces now engaged there could possibly be released for European duty. In view of the overwhelming U. S. naval superiority in the Far East, it is possible that a total force of four divisions might be considered adequate garrison for the Japanese Islands if hostilities in Europe should cause a decision to concentrate all available troops in that theater.

It may therefore be concluded that the maximum number of divisions which could be made quickly available for European duty, additional to those already scheduled, would be one Marine and three Army Divisions from the Z.I., and possibly five divisions from the Far East. This figure of nine divisions is a maximum, and it is highly unlikely that a decision would be made to accept the strategic risk which would be involved in such a concentration.

The present U. S. and Allied force in Western Germany includes

U. S.	3 divisions and the U. S. Constabulary
British	4 divisions
French	3 or 4 divisions

By the end of the year these will have been increased to include

U. S.	5 divisions and the U. S. Constabulary
British	4 divisions
French	10 divisions (5 in combat readiness, 5 at 3 days' notice)
Belgium	1 division

There is considerable doubt whether this French commitment will be fulfilled.

It is evident that either the forces presently available or those expected by the end of this year would be in a very vulnerable position if subjected to a determined attack from the East. The present front, stretching from the Baltic to Jugoslavia, is 700 miles long. To defend this line there are now not more than 12 divisions, some of them partially trained and not at all fully equipped. They face the danger of airborne operations against the Rhine crossings in their rear. Air protection is inadequate since the ring of fighter air bases projected for construction behind the French border has not yet been built.

26

The difficulties of this position could be partially met by withdrawal to the Rhine and the Alps. Defense of the Southern sector would presumably devolve upon the Southern Command of SHAPE. The line of the Rhine would then extend some 350 miles from the Swiss border to the sea. If this shorter line could not be successfully defended, a possible withdrawal from Western Europe north of the Pyrenees appears to be contemplated. Two recent developments support this conclusion. One is the change in the line of communications of the European Command, which no longer originates in Bremen but instead passes from Bordeaux through Verdun and Metz. The other development is the agreement, details of which are incomplete or unannounced, between the U. S. and Spain. Unless a retreat into or beyond southern France is considered possible, the value of U. S. bases in Spain does not seem to justify the political risks involved.

Present capabilities in Europe seem to be indicated accurately by the statement of Lt. Gen. A. M. Gruenther, Chief of Staff, SHAPE, in June of this year, that while "significant" progress has been made, "we are still not in a position to defend Western Europe." (quoted in the N. Y. Times, June 29, 1951).

These estimates of the very limited immediate capabilities of the U. S. Army in terms of combat divisions seem in general to be supported by the situation in regard to weapons and equipment. Supplies of World War II materiel are being depleted both by the action in Korea and by contributions to U. S. Allies under MDAP. New equipment and weapons, production of which has been authorized by recent appropriations, will not be an important factor for nearly a year. It seems that the policy of maintaining the size of the Army unchanged through the fiscal year 1952 is at least in part determined by the quantities of weapons and equipment now available.

This statement of present Army capabilities does not take into consideration the possible use and effectiveness of new and unconventional weapons of atomic, biological, radiological, and chemical warfare, which are treated elsewhere in this report.

B. ADMINISTRATIVE ORGANIZATION

28

1. Constitution of the Army.

The U.S. Army includes the Regular Army, the National Guard of the United States, and the Organized Reserve Corps.

2. Command of the Army.

Command of the Army and all components thereof is exercised by the President through the Secretary of Defense and the Secretary of the Army, who directly represent him.

3. Department of the Army.

a. The Department of the Army is a military department within the Department of Defense. It was so established by the National Security Act of 1947, as amended by the National Security Act Amendments of 1949. The Army Organization Act of 1950 provided for the organization of the Army and the Department of the Army. In general, this Act followed the policy of vesting broad organizational powers in the Secretary of the Army, subject to delegation by him, rather than specifying the duties of subordinate officers. A chart of the organization of the Department of the Army is attached as Appendix I.

b. The Secretary of the Army is the head of the Department of the Army. Subject to the direction, authority, and control of the President and the Secretary of Defense, the Secretary of the Army conducts all affairs of the Army Establishment. He is assisted by an Under Secretary, two Assistant Secretaries, a legal Department Counselor, and an Administrative Assistant.

c. The Chief of Staff of the Army is the principal military advisor of the Secretary of the Army. He is directly responsible to

the Secretary of the Army for the efficiency of the Army, its state of preparation for military operations, and plans therefor. He presides over the Army Staff, transmits to the Secretary of the Army plans and recommendations prepared by the Army Staff, advises him in regard thereto, and acts as the agent of the Secretary of the Army in carrying the same into effect. He is the representative of the Army among the Joint Chiefs of Staff. By virtue of his position he takes rank above all other officers of the Army.

d. The Army Staff is the Staff of the Secretary of the Army at the seat of government. It includes the Chief of Staff and his immediate assistants, the General and Special Staffs, and the Administrative and Technical Staffs. The precise function of each of these are defined in the U.S Government Organization Manual 1951-52, pp. 130-135.

Growth in the size and importance of the Army Staff has been a significant feature in the development of the Army structure since the beginning of World War II. On 28 February, 1951, military personnel on duty in the Department of the Army included 3410 officers and 474 enlisted men. The relative distribution of this personnel is indicated by the following table showing distribution immediately before the outbreak of hostilities in Korea. In each case it is probable that the present number is 50 to 100% larger.

Office of the Secretary of the Army	100
Office of the Chief of Staff	300
Divisions of the General Staff	800
Special Staff	300
Technical Staff	600
Administrative Staff	300
	2,300

4. Army Field Forces

The mission of the Office of the Chief, Army Field Forces, is to supervise the training of all individuals and units used by the

Army in the field, and to supervise the following Army Field Force Boards:

a. Board No. 1, at Ft. Bragg, N.C., which is responsible for testing of Army aviation equipment, airborne equipment, and field Artillery equipment.

b. Board No. 2, at Fort Knox, Ky., which is responsible for automotive equipment and heavy fire-control equipment in connection with armored vehicles.

c. Board No. 3, at Ft. Bragg, N.C., which is responsible for infantry equipment.

d. Board No. 4, at Ft. Bliss, Tex., which is responsible for anti-aircraft artillery and guided missiles.

e. The Arctic Test Branch of the four Army Field Force boards, which is responsible for all forms of equipment under Arctic conditions.

The headquarters of the Army Field Forces is at Ft. Monroe, Va.

5. Continental Commands

The commanding general of each of the Continental Armies and the Military District of Washington commands all units, activities, and installations within his area, except those specifically commanded by the head of an Administrative or Technical service or other agency of the Department of the Army. He is responsible for the operations, training, administration, services, and supply of all units, activities, and installations of his command, and for certain activities at installations reporting to the Department of the Army.

The accompanying map of the United States, attached as Appendix II, indicates the Army Areas of the Continental Commands. The Army Areas, Headquarters, and territory included are as follows:

First Army, Hq. Governor's Island, N.Y.

Connecticut
Maine
Massachusetts
New Hampshire
New Jersey
New York
Rhode Island
Vermont

Second Army, Hq. Ft. George G. Meade, Md.

Delaware
Kentucky
Maryland
Ohio
Pennsylvania
Virginia
West Virginia

Third Army, Hq. Ft. McPherson, Ga.

Alabama
Florida
Georgia
Mississippi
North Carolina
South Carolina
Tennessee

Fourth Army, Hq. Ft. Sam Houston, Tex.

Arkansas
Louisiana
New Mexico
Oklahoma
Texas

Fifth Army, Hq. Ft. Sheridan, Ill.

Colorado
Illinois
Indiana
Iowa
Kansas
Michigan
Minnesota
Missouri
Nebraska
North Dakota
South Dakota
Wisconsin
Wyoming

Sixth Army, Hq. Presidio of San Francisco, Calif.

Arizona
California
Idaho
Montana
Nevada
Oregon
Utah
Washington

6. Overseas Commands.

a. Far East Command, Hq. Tokyo, Japan. U.S. Army Forces, Far East, are administratively integrated with the Far East Command, which consists of four administrative sub-commands: Eighth Army (Korea), U.S. Army Forces in Japan, Ryukyus Command, and Marianas-Boni

 32

b. European Command, Hq. Heidelberg, Germany. U.S. Army Forces in Europe, including the Seventh Army, are under the administrative jurisdiction of the European Command and the operational control of Supreme Hq., Allied Powers in Europe. U.S. Forces in Austria is a sub-command of the European Command.

c. U.S. Army, Alaska, is under the jurisdiction of the Alaskan Command; the latter is under an Air Force officer. Hq. are at Ft. Richardson, Alaska.

d. U.S. Army, Caribbean, is under the Caribbean Command, which is under an Army officer. Hq. are at Post of Quarry Heights, Canal Zone. U.S. Army Forces, Antilles, is a sub-command of the Caribbean Command.

e. U.S. Army Pacific is under jurisdiction of the Pacific Command, which is under a naval officer. Hq. are at Ft. Shafters, Oahu, T.H.

7. Army Branches

There are twelve Basic Branches and three Special Branches, the latter with separate promotion lists.

a. Basic Branches

Infantry	Quartermaster Corps
Armor	Finance Corps
Artillery	Ordnance Corps
Engineer Corps	Chemical Corps
Signal Corps	Transportation Corps
Adjutant General's Corps	Military Police Corps

b. Special Branches

Judge Advocate General's Corps
Army Medical Service (including Medical Corps, Dental Corps, Veterinary Corps, Medical Service Corps, Army Nurse Corps, Women's Medical Service Corps)
Chaplains

8. Women's Army Corps. 33

The WAC is a separate component of the Army. The number of women who may serve at any one time as members of the Regular Army is fixed at two percent of the strength of the regular establishment.

C. TACTICAL ORGANIZATION

1. Regimental Combat Team.

Although the Division is usually considered the smallest composite unit capable of operating independently, the Regimental Combat Team has recently received considerable emphasis as a unit of greater maneuverability than a division and capable of undertaking independent combat missions. A Regimental Combat Team appears to consist basically of an infantry regiment, an artillery batallion, and an engineer company, together with attached armor and service units. Present Army plans call for the formation of 18 such units. The 187th Airborne R.C.T. has been in action in Korea, though recently withdrawn to Japan. The 45th Infantry Division, now on occupation duty in Japan, is organized into three R.C.T.'s, rather than the normal organization.

2. Division.

There are three types of U.S. Army Divisions, Infantry, Armored, and Airborne. Tables of Organization of these three types of divisions are attached as Appendix III.

a. The Infantry Division has 18,804 men. It normally travels and fights on foot, but there is a growing tendency to provide motorized transport directly to the combat area. Recent developments in provision of armored personnel carriers are directed to this end. The increasing use of VT fused ammunition, with its distructive effects on unarmored troop concentrations, has been a major incentive to this development.

b. The Armored Division has 15,973 men - foot, motorized, and mechanized elements.

c. The Airborne Division has 16,630 men, and is capable

of being transported entirely by air and landed in the combat zone by parachute. Because of the present tendency toward air transportability of the Infantry Division, the distinction between Infantry and Airborne Divisions is tending to disappear. The First Infantry Division now in Germany, is capable of moving by air with all of its equipment except the 155 mm. howitzer.

d. The relative efficiency of Army and Marine Divisions has recently been the subject of public debate. The question of considerable expansion in the size of the Marine Corps, and its position in the Armed Forces, is at present uncertain and subject to Congressional decision. Attached as Appendix IV are tables showing the Table of Organization of a Marine Division, and a comparison of the weapons of Marine and Army Divisions.

3. Corps

The next higher headquarters above the division is the corps. It consists of a corps headquarters, certain corps troops, and such divisions as may be assigned to it.

a. The corps is primarily a tactical unit. The corps headquarters is designed for the purpose of coordinating and controlling the combat operations of two or more divisions by a single commander who is not burdened by supply and administrative responsibilities.

b. Unlike the division organization, the corps is not a fixed self-contained unit. It normally consists of two or three Infantry Divisions and one Armored Division, but it may be composed of any number of divisions required for the accomplishment of its mission. Its total strength, therefore will vary.

c. Examples of corps troops, available to the corps commander for attachment to his subordinate combat units are:

1) Heavy Artillery

2) Various types of Engineer units

3) Armored Replacement Bns.

4) Signal Bn.

5) Quartermaster Truck Rgt. or Bn.

6) Ordnance Bn.

7) Military Police

8) Medical Bn.

4. Field Army.

The Field Army is the next higher organization to the corps. It is composed of a headquarters, certain army troops, a variable number of corps, and a variable number of divisions. Like the division, it is self-contained, in that it has the means for independently carrying out tactical and administrative responsibilities. It normally consists of two or more corps plus a pool of reinforcing units termed army troops. It may also contain additional divisions not assigned to one of its corps.

5. Army Group.

An Army Group is the largest field organization handled by a single commander. An Army Group is formed when the forces within a theater of operations consist of several Field Armies. It may include from 400,000 to 1,500,000 troops. The formation of Army Groups is primarily for tactical purposes and facilitates the control of the various armies by the theater commander. Unlike the Corps and Field Army, the Army Group ordinarily does not have a reserve of reinforcing units.

6. Division Slice.

"Division Slice" is a term [illegible] to the total number of troops

contained in a division and required to support it in the field. It is properly restricted to troops in a theater of operations, either in the combat zone or the zone of communications. In general, it is considered to include:

a) The Divisions themselves

b) Corps and Army support troops

c) Corps and Army headquarters troops

d) Logistical support troops within the theater.

According to a monograph published on the Division Slice, written by General Ogden and published in the Hearings of the House of Representatives Appropriations Committee on the Department of Defense appropriations for 1952 (Part 1, page 31) the typical planned division slice is 50,000 men. The following table, derived from this source, shows that this figure indicates a considerable relative decrease in the number of non-divisional troops included in the typical division slice since World War II.

	Division	Army Zone Slice	Theater Slice
World War II	13,500	27,000	41,000
Typical Field Army	18,000	36,000	50,000
Percent of Increase	33	33	22

D. ORDER OF BATTLE

1. The Zone of the Interior

Inspection of the map makes it plain that, whatever considerations dictate the placing of troops in the United States, the idea of equal protection for all parts of the country is not one of them. At the outbreak of hostilities in July 1950, the following serviceable divisions were in this country:

2 Infantry, Fort Lewis, Wash.

3 Infantry, Bort Benning, Ga.

1 Marine, Camp Pendleton, Calif.

2 Armored, Fort Hood, Tex.

11 Airborne, Camp Campbell, Ky.

82 Airborne, Fort Bragg, N.C.

This disposition of 2 on the Pacific Coast, 1 in Kentucky, 2 in the Southeast, and 1 in the deep South suggests only that transportation within the country was expected to be able to take care of any necessary movements, no particular movement being anticipated.

These were in various states of readiness, but the first three could be shipped to Korea, the latest by November, 1950. This was by means of borrowing men and units. The 11 Airborne contributed the 187 RCT, and the 3 Division took the 65 RCT from Puerto Rico. Simultaneously the 2 Armored was reduced to organize the 1 Armored, also at Fort Hood. The build-up in Korea left only one ready division - the 82 Airborne - in the United States. The long transportation of the 3 Infantry Division was, of course, necessitated by the fact that there were no troops to be had nearer the scene of action.

39

The 40 Infantry (N.G. Calif.) and 45 Infantry (N.G. Okla.) were called up with the express purpose of sending them to Japan as replacement for troops withdrawn from there to Korea. Their training areas, Camp Cooke, Calif. and Camp Polk, La. respectively, were chosen for convenience in the crisis and not in accordance with any permanent principle.

When the subsequent expansion of the army began there was no attempt to fill the places left vacant. No new divisions were organized at Lewis, Cooke, Pendleton, or Polk. At Benning the 4 Infantry was made active, not to take the place of the 3 Infantry but presently to be transported to Germany. Only at Hood was there plan for what might be called replacement, the 1 Armored being made ready and the 2 Armored sent later to Germany.

The present placing of active divisions (in different degrees of activity) is as follows:

28 Infantry, Camp Atterbury, Ind.

43 Infantry, Camp Dix, N.J.

11 Airborne, Camp Campbell, Ky.

82 Airborne, Fort Bragg, N.C.

1 Armored, Fort Hood, Tex.

Of these the 28 Infantry and the 43 Infantry have been designated for movement to Europe in October and November, 1951.

It is evident that troop location did not and does not conform to any conception of a general garrison for the country. In this connection it may be noticed that plans for defense against air attack seem to be very little advanced as yet. The nature of those plans are indicated in the placing of AA Headquarters at Air Force bases, e.g.:

Hq. Eastern AA Command, Stewart AFB, N.Y.

Hq. First Army AA Command, Mitchell AFB, N.Y.

Hq. Fifth Army AA Command, Ent AFB, Colo.

Hq. Sixth Army AA Command, Hamilton AFB, Calif.

Either their security is very good, or these are commands without many guns. There are few signs of AA concentration around such cities and industrial areas as would make likely targets for air attack. This may be because trained crews are not yet available or because defense is to be committed to Air Force interception instead of th AA. That there is some measure of truth in the former possibility is suggested by the concentration of AA units at such points as Edwards, Mass., and Stewart, Ga., which must be training centers, since they are not placed to defend anything in particular. A few movements toward centers of population may be the precursors of a general distribution of that kind:

51 AAA Brigade,	Stewart, 2 Nov. 1950
	Chicago, 4 Aug. 1951
80 AAA Group,	Devens, 30 Dec. 1950
	Totten (N.Y.C.), 24 Mar. 1951
209 AAA Group,	Stewart, 2 Nov. 1950
	Indiantown Gap (Harrisburg), 7 July 1951
260 AAA Group,	Edwards to Meade (Baltimore), Mar.-Apr. 1951
9 AAA Gun Bn.,	Bliss 10 Feb. 1951
	San Francisco, 11 Aug. 1951
36 AAA Gun Bn.,	Bliss, 10 Feb. 1951
	Meade, 12 May 1951

The present dispersion of ground troops is largely the result of circumstances. Installations already in being must be used where

41

possible, and large camps have in the past been built in the South because the weather allowed more days for training, and in the East to be accessible to the centers of population. These considerations still govern the training program. There are the following training Divisions now in the Federal service:

5 Infantry, Indiantown Gap, Pa.

6 Infantry, Fort Ork, Calif.

8 Infantry, Fort Jackson, S.C.

9 Infantry, Fort Dix, N.J.

10 Infantry, Fort Riley, Kan.

31 Infantry, Fort Jackson, S.C.

47 Infantry, Camp Rucker, Ala.

3 Armored, Fort Knox, Ky.

5 Armored, Camp Chaffee, Ark.

6 Armored, Fort Leonard Wood, Md. (?)

7 Armored, Camp Roberts, Calif.

101 Airborne, Camp Breckinridge, Ky.

Of these 12, 6 are east of the Mississippi, 9 east of the mountains; only 2 are north of Baltimore.

While these training units are organized as combat divisions, essentially the same basic training is given at each, regardless of the designation "Infantry", "Armored", or "Airborne".

A large part of the armed forces in this country are organized not by divisions but by lesser units, and it is impossible to say what their combined strength is at present. Most of them are undoubtedly undergoing training, and some centers of specialized training are indicated by concentration of certain arms at the following points:

42

AAA, Camp Edwards, Mass.

AAA, Fort Meade, Md.

AAA, Fort Stewart, Ga.

AAA, Camp Custer, Mich.

AAA, Fort Lewis, Wash.

Artillery, Fort Bragg, N.C.

Artillery, Camp Polk, La.

Artillery, Camp McCoy, Wis.

Artillery, Camp Carson, Colo.

Armor, Camp Polk, La.

Engineers, Camp Campbell, Ky.

Engineers, Fort Lewis, Wash.

Engineers, Camp Roberts, Calif.

Infantry (Ranger), Camp Carson, Colo.

Reconnaissance, Camp Pickett, Va.

Calculation of American potential must take into account the National Guard, since that is regarded as the first source of new combat units. Originally, of course, the National Guard would have furnished garrison troops. There is now, however, no disposition to associate them with their home states once they have been called into the Federal service.

2. The Far Eastern Command

The main ground force of the Far Eastern Command consists of 8 Infantry Divisions (2 in Japan, 6 in Korea - the 1 Cavalry being organized as Infantry), 1 Marine Division (in Korea) and 3 Regimental Combat Teams (2 in Japan, 1 on Okinawa). Since the units are reported to have been at full strength since May, 1951, this gives a force of about 186,500 men. The shooting strength can be reasonably calculated as:

78,622 small arms offensive weapons
1,592 mortars
1,089 recoilless rifles
1,352 tanks
702 artillery pieces
111 flame throwers
256 M-16 SP AA weapon
256 M-19 SP AA weapon

(The basis of this estimate is given on the table of Offensive Weapons appended.) To this must be added Corps and Army troops in unknown amount.

It is impossible to calculate what total this would produce, counting troops of all services, because 1) the mutual contributions of U.S. and ROK services is unknown, and 2) the extent to which civilian labor can replace military in Japan and Korea is equally unknown. Senator Douglas' figure of a total 75,000 necessary per division of 18,900 would give 659,000 army personnel (plus 70,500 Marines) which is clearly impossible if the whole army was 1,500,000 - 1,600,000 in June. Even

44

given to the House Budget Committee, would amount to 439,000 without the Marines, leaving only 1,161,000 for the establishments in Europe, America, and the outlying commands. The estimates of 500,000 in the Far East (Herald-Tribune, 20, June) and 250,000 plus (Times, 9 July) seem to be no more than guesses.

The organization of the ground forces of the Far Eastern Command is as follows:

Gen. Matthew B. Ridgway, CG

Lt. Gen. Doyle O. Hickey, C of S

GHQ Tokyo

XVI Corps

GHQ Reserve Corps, redesignated XVI 13 May 1951

Maj. Gen. Roderick R. Allen, CG

HQ Camp Sendai, Japan

Components:

40 Inf. Div. (OB of the several Divisions appended)

45 Inf. Div.

34 RCT

187 RCT

Ryukyus Command

HQ Okinawa

Components:

29 RCT

65 AAA Gun Bn.

97 AAA Gun Bn.

22 AAA and AW Bn.

Eighth Army

Lt. Gen. James A. Van Fleet, CG

Lt. Gen. John B. Coulter, Deputy Commander

HQ Possibly Pusan

I Corps

Lt. Gen. Frank W. Milburn (relieved Aug. 1951;
successor not announced)

Brig. Gen. Thomas L. Harold, Deputy

Brig. Gen. Rinaldo Van Brunt, C of S

West Front Korea, no HQ known. APO 358 S.F.

Components:

1 ROK Div.

1 Cavalry Div.

3 Inf. Div. (until 17-18 May, 1951)

25 Inf. Div.

IX Corps

Maj. Gen. Wm. M. Hoge, CG

Brig. Gen. Thomas J. Cross

Central Front Korea, no HQ known. APO 264 S.F.

Components:

24 Inf. Div.

1 Marine Div.

7 Inf. Div.

X Corps

Maj. Gen. Clovis E. Byers, CG

(Established in Korea 23 Sept 1950 with components:

Eighth Army. (Cont.)

X Corps. (Cont.)

7 Inf. Div.

24 Inf. Div.

25 Inf. Div.

1 Cav. Div.)

East Central Front Korea, no HQ known

Present Components:

3 Inf. Div. (since 17-18 May 1951)

2 Inf. Div.

To the right of X Corps are (or were in May)

3 ROK, 5 ROK

7 ROK and 9 ROK Divs.

At the outbreak of hostilities in Korea each Infantry Regiment in Japan except one, was 1 battalion under strength; the 4 divisions, therefore lacked a total of 11 Infantry Battalions. They also lacked 11 FA Batteries. Eighth Army as a whole was 32,000 men short of T/O strength. In the first three months of hostilities, 100,000 troops and 2 million tons of equipment were sent to Korea; 9 bns. of infantry, armor and artillery, while individuals from every organization in the Army formed trained cadres for 6 additional bns. 2 Inf. Div. was brought up to strength by similar stripping of other units and sent to Korea. 3 Inf. Div. was not yet up to strength when it sailed; the 65 Inf. Reg. from Puerto Rico was its third regiment. 11 Airb. Div. was stripped to form a full strength Airb. RCT, the 187. When the troop build-up in Korea was complete, 82 Airb. Div. was the sole remaining combat-ready division in Z.I. Through March 1951 U.S.

Divisions in Korea were nearly 2,000 men under strength, the difference being made up by Korean units. The integration of Korean soldiers into American ranks began with the 1 Cavalry Division in the summer of 1950 and proved so successful that the practice was extended to all American units in Korea. It was expected that American divisions in Korea would be at full strength by May 1951.

Aside from U.S. and ROK troops in action in Korea there are the following allied units:

British 1st Commonwealth Div. (with Belgian and Luxemburger troops attached)

Turkish Brigade

21 Thailand Inf. Reg., attached to U.S. 8 Cav. Reg.

4 Greek Bn., attached to U.S. 7 Cav. Reg.

Belgian Bn., attached to U.S. 3 Inf. Div.

Dutch Bn., attached to U.S. 2 Inf. Div.

French Bn., attached to U.S. 2 Inf. Div.

Colombian Bn.

Ethiopian Bn.

48

3. American Ground Forces in Europe

The ground forces of the European Command consist of the U.S. Constabulary, 2 Infantry Divisions, 1 Armored Division, and 3 Regimental Combat Teams, as well as various unattached, or unlocated units. Assuming these divisions to be at full strength, and omitting troops assigned to service units, the combat strength of our ground forces can be computed at approximately 86,000 men as of 1 August 1951. Shooting strength, calculated on the basis of the appended table, can reasonably set at:

32,851 small arms offensive weapons
723 mortars
405 recoilless rifles
1,259 tanks
342 artillery pieces
224 M-16 SP AA weapons
224 M-19 SP AAA weapons

Total ground strength including service, Corps and Army troops is estimated to be approximately 150,000. The New York Times reported 100,000 in February 1951, and Time's estimate of 130,000 (23 July 1951), based upon 85,000 combat soldiers, appears to be not far wrong.

The organization of American ground forces in Europe is as follows:

Supreme Headquarters Allied Powers in Europe (SHAPE)

Hq. Rocquencourt, France

CG: General of the Army Dwight D. Eisenhower

Deputy CG: Field Marshall Montgomery

C/S: Lt. Gen. Alfred M. Gruenther

Allied Forces, Central Europe

American Ground Forces in Europe. (Cont.)

Deputy CG: Gen. Augustin Guillaume

Allied Forces, Southern Europe

Commander: Admiral Robert B. Carney

Ground Commander: Gen. Maurizio L. de Castiglione

C/S Maj.,Gen. James M. Gavin

United States Forces in Europe (EUCOM)

Hq.: Heidelberg, Germany

CG : Gen. Thomas T. Handy

C/S Maj. Gen. Daniel Noce

Seventh Army

Hq. Stuttgart, Germany

CG: Lt. Gen. Manton S. Eddy

V Corps

Hq.: Bad Nauheim, Germany

CG: Maj. Gen. John E Dahlquist

U.S. Constabulary

1 Inf. Div.

4 Inf. Div.

2 Arm. Div.

United States Forces in Austria (USFA)

Hq.: Salzburg, Austria

CG : Lt. Gen. S. LeRoy Irwin

USFA Tactical Command: Brig. Gen. James C. Fry.

50

American Ground Forces in Europe. (Cont.)

Trieste United States Troops (Trust)

Hq.: Trieste

CG : Maj. Gen. Edmund B. Sebree

The exact relationship existing between SHAPE, EUCOM, and Seventh Army at the present time is not clear. Before the outbreak of war in Korea, EUCOM exercised authority over all American forces in Europe, the principal tactical units being the 1st Infantry Division and the U.S. Constabulary. When the Seventh Army was reactivated, in November 1950, it assumed tactical control; and EUCOM became primarily a logistical support command. In theory, the Seventh Army is already subordinate to General Juin, Allied Commander for Central Europe under SHAPE. SHAPE is to be operational headquarters for all allied forces in Europe, while EUCOM will handle administrative problems for American troops. Actually, however, EUCOM appears to be still under the direct control of the Department of the Army and performs most of the functions not already taken over by the Seventh Army.

Eventually, of course, American forces will be more closely integrated into the projected Allied armies under SHAPE. When the organization of SHAPE is completed, the Seventh Army will take its place beside other Allied units under the central authority. But it is probable that EUCOM, or a similar command, will be retained as a direct channel of communication between Washington and American troops in Europe.

Since June, 1950, two divisions, the 4 Infantry Division and the 2 Armored Division, have been sent to Europe. Before the end of 1951 they will be joined by two more, the 28 Infantry Division and the 43 Infantry Division. With these will go VII Corps Headquarters now in

American Ground Forces in Europe. (Cont.)

the Second Army, Z.I. Unlike most National Guard divisions of World War II the 28 and 43 retain their National Guard cadres almost intact. In spite of some shortage of equipment their condition is considered good, though far from perfect. This will provide a force equivalent to 6 divisions (4 infantry, 1 armored, and the Constabulary) all, except the 28 and 43, under the recently established V Corps. On the basis of General Ogden's monograph on the so-called division slice presented to to the House Committee on Appropriations, which allows 50,000 theatre troops per division of 18,000 men, total American ground forces in Germany would then amount to roughly 300,000 men. This figure, when increased by the units assigned to Austria, Trieste, The United Kingdom and elsewhere, appears compatible with Secretary Marshall's estimate of 340,000 ground troops in Europe by the end of 1952, by which time all divisions and their supporting units should have arrived. General Collins' figure of 284,000 ground troops by 30 June 1952 indicates that these supporting units will be transferred to Europe more slowly than the divisions.

Recent developments have shown the general form to be anticipated for EUCOM. The port of entry as late as June 1951 was Bremerhaven; a line from Bordeaux through Verdun and Metz has now been designated as the communication zone. This would obviously be a great advantage if American forces were compelled to withdraw to the Rhine. Another arrangement looking in the same direction, and also a step in the general integration of the European forces, is the establishment of an American supply base at Kaiserslautern, and a training area just to the north at Baumholder, both in the French Zone west of the Rhine.

American Ground Forces in Europe. (Cont.)

The area from the Rhine to the present line is evidently being cleared so far as possible of all except combat troops. It is significant for the understanding of their proposed function that the 28 and 43 Divisions are to be given training against airborne attack from their rear. One other recent event shows the increased importance of positions in the South: the landing at Leghorn of 1,200 troops, 100 of whom were to be kept to operate the base while the rest go to USFA. (Herald-Tribune 13 Aug. 1951) This may be a step in the utilization of Mediterranean ports, adequately protected by the fleet, as major bases for the forces in Austria.

Finally, total Allied strength rests not only upon the contributions of the American army but upon those of our allies as well. At present, British and French troops on occupation duty in Germany provide the bulk of these forces. According to the New York Times (15 and 20 May, 29 July 1951) present plans call for 4 British divisions, 10 French (5 ready and 5 in reserve), 5 Italian, and various units from the smaller countries to be available by the end of 1951. According to the New York Times (19 Aug. 1951) the troops available to SHAPE by 31 Dec. 1951 will be 4 British divisions; 10 French (5 combat-ready, 5 at 3 days' notice); 5 Italian infantry divisions, 2 brigades of Alpine troops, and 1 armored brigade (but the training and equipment of these are inadequate); 1 Danish division (brigade according to the Herald-Tribune 26 July 1951; this, together with one Norwegian brigade, would be in Schleswig-Holstein to guard the Kiel Canal); 1 Netherlands RCT (6,000 men); 3 Belgian divisions. The Times (25 July 1951) estimates that by the end of this year there will be 500,000 Allied soldiers and airmen in Germany. It would be premature, however, to take these contributions for granted;

53

Allied Ground Forces in Europe. (Cont.)

and Secretary Marshall's statement that the NATO powers will have 2,500,000 men in active service by the end of 1952 (New York Times, 28 July 1951) will require the maximum effort and efficiency of all parties concerned.

4. Other Oversea Commands

a. Iceland Defense Force

Advance detachment of 200 U.S. troops arrived in Iceland, 7 May 1951. This is a unified force, consisting of Army, Navy, and Air Force personnel. It is under the operational control of CIC, Atlantic Fleet. Activities center on two airports, Keflavik and Reykjavik. Listening posts and other strategic installations are located elsewhere. Radar and weather stations are to be established on a large scale.

b. Alaskan Command (U.S. Army, Alaska)

The principal Army installations in Alaska are those at Fort Richardson and at Ladd Air Force Base. Fort Richardson, 7 miles northeast of Anchorage, is the headquarters and center of all Army activity in the area. In March 1950, total strength at Fort Richardson was 3,165 men, charged primarily with the defense of Elmendorf Air Force Base. In July 1951, the 196 RCT, a South Dakota National Guard unit in training at Camp Carson, Colorado, since August 1950, was ordered to Anchorage, Alaska. It was to proceed by sea to Haines, Alaska, and engage in maneuvers during the month of August before taking up permanent station at Anchorage.

Ladd Air Force Base, Fairbanks, Alaska, had a station complement of 396 men in March 1950. Its facilities are being expanded, however, and elements of the 4 Inf. Regt. from Camp Carson have arrived. The station will eventually be capable of accomodating an entire regiment. The troops are intended for defense of the Air Base, the most northerly bomber and fighter base in Alaska. Arctic test facilities are to be located here.

4. Other Oversea Commands. (Cont.)

Another station worthy of note is Eielson AF Base, 25 miles southwest of Fairbanks. The largest bomber base in Alaska, it had a defending force of 166 men in July 1950. Plans apparently exist for the expansion of this force. Budget plans presented to the House Appropriations Committee in 1951 call for construction of barracks for 400 men; but this was said to be far short of eventual needs and the ultimate planned strength of the base is classified information.

In July 1950, 884 men were stationed at Whittier, Alaska, the port of entry for troops and supplies for both Army and Air Force on the mainland. There is no indication that the strength of this post has been increased. Finally, Big Delta, Alaska, APO 733, 105 miles southeast of Fairbanks, should be noted as the home of the Army Arctic Training Center.

Strategic plans for Alaska are discussed in the New York Times of 19 August 1951. Half a billion dollars are scheduled for the next 4 years, almost all appropriated or authorized since July 1950. Personnel at air bases are now being increased, radar and AA installations built up along the sea coast, highways constructed to connect air fields with harbors. The garrison of Marks Field Air Base at Nome is being increased The defense line now runs from Fairbanks down the Alaska railroad through Elmendorf Field, Ft. Richardson area to Kodiak - a 550 mile line of air bases and garrisons.

c. Caribbean Command (U.S. Army, Caribbean?)

The defense of the Caribbean area has been entrusted to a unified armed forces command consisting of U.S. Army Caribbean, the Caribbean

4. Other Oversea Commands. (Cont.)

Air Command and the Caribbean Sea Frontier. Units listed in Appendix V are the only ones, aside from Puerto Rican National Guard outfits, which could be located in this area.

d. Pacific Command (U.S. Army, Pacific)

Like the Caribbean, the Pacific Command has been largely by-passed by recent military developments. The increasing American commitments to the defense of the Far East have centered upon Korea, Japan, and Okinawa; and there is no evidence of any build-up of ground forces elsewhere in the Pacific area.

57

E. Manpower and Training

1. Army Strength

In June, 1950, the Secretary of Defense reported 593,000 men on active duty in the Army. This force was organized as 10 divisions, additional regimental combat teams and supporting units. By June, 1951, more than 1,200,000 men had been called to service, leaving a net total of more than 6,550,000 for the Army. Present plans call for stabilization of Army manpower at between 1,500,000 and 1,600,000, according to General Collins. About 630,000 will be eligible for release in fiscal 1952 and present plans call for recruitment of enough new manpower to maintain the balance. This will provide the equivalent of 24 divisions -- 18 organized as divisions andthe rest as RCT's (18). Two more divisions added to the 16 currently on active duty will complete this total. In addition to the 18 divisions General Collins has predicted the federalization of two additional National Guard divisions; and Mrs. Rosenberg has stated that two divisions will be recruited by June 1952 from troops now assigned to non-combat duty. These additions would make a grand total of 29 divisions or their equivalent, including the U. S. Constabulary in Germany, at the end of the current fiscal year.

The distinction of U. S. ground forces at the present time is roughly as follows. The projected strength of the Army as of 30 June, 1951 was 1,552,000 men. Maximum strength of forces in the Zone of the Interior during fiscal 1951 was 981,988 men. Estimating 150,000 troops in Europe, approximately 420,000 remain for the Far Eastern and other overseas commands. Of these, probably 400,000 are actually in the Far East.

58

The average strength of the Army for fiscal 1951 and 1952 had been presented to Congress as follows:

	1951	1952
Commissioned officers	89,172	120,600
Warrant officers	7,925	14,700
Nurses and WMSC	5,296	8,300
Enlisted personnel	984,647	1,385,200
Cadets, USMA	2,334	2,400
Totals	1,089,374[1]	1,531,200[2]

[1] 1 July, 1950: 539,000; 30 June 1951: 1,531,000.

[2] 1 July, 1951 and 30 June, 1952.

2. Sources of manpower

One of the basic problems with which the armed forces must deal is that of recruiting and maintaining, in the most efficient and equitable way possible, a force commensurate in size and degree of preparedness with their broadening responsibilities. Furthermore, plans are being made to keep available, or in ready reserve, trained troops to meet emergency requirements during an indefinite period of international tension. It was to meet this need that the Department of Defense proposed a Universal Military Training program, now to be elaborated by the National Security Training Commission in accordance with the terms of the Selective Military Training and Service Act of 1951.

The act provides for the establishment of a Universal Military Training program under which 18 year old men will be trained for 6 months in a National Security Training Corps. Upon completion of this period, the men will be held in a Reserve Corps for 7½ years. Such a program, if successfully carried out, should ... the

Army in time of need while avoiding the necessity of maintaining an expensive military establishment during periods of relative peace. Actual setting-up of UMT must wait upon approval by Congress of regulations to be drawn up by the National Security Training Commission and proclamation by the President that men under 19 years of age are no longer needed for the draft. It is not expected to go into effect in the near future.

For its immediate needs, the Army must rely upon existing means of procuring manpower. Enlistments, Selective Service, the National Guard and Reserve programs are the channels through which the strength of the Army is sustained.

a. Voluntary enlistment.

Voluntary enlistments between July 1950 and April 1951 were 198,000 men, in addition to whom the Army reported 61,000 immediate and 33,000 delayed re-enlistments for a total of 292,0000. Of the 630,000 men to be released from service during fiscal 1952, 200,000 are expected to re-enlist. The reliability of such expectations, however, together with that of predictions as to the number of first-time volunteers, depends almost entirely upon future events. While the Army must obviously attempt to calculate the number of voluntary enlistments it can count upon during the months ahead, such calculations must always be held subject to change without notice. International or military developments, or changes in regulations concerning the draft, may, as they have in the past, bring about striking upward or downward fluctuations in the rate of volunteering.

b. Selective Service.

The Selective Military Training and Service Act of 1951 now governs the recruitment of military personnel by means of the draft. Under its terms, men 18½ years of age ... after

all of the 19-25 age group has been exhausted by their local board. Physical standards have been reduced to those acceptable in January 1945; and the current mental standard is a score of 65 on the Army General Classification Test. The new standards should make available approximately 500,000 men previously classified 4-F. Under earlier draft legislation, 816,124 men between the ages of 19 and 26 were reported eligible for induction in October 1950, with 457,000 more becoming available annually. In addition to the 500,000 4-Fs, the Act of 1951 makes available an undetermined number of 18½ year olds, while changes in deferments on account of dependents are expected to release 235,000 more for 1-A classification. It is apparent that the new law has, thus, significantly increased the manpower pool on which the armed services can draw.

With the October 1951 quota, the number of men drafted since June, 1950 will reach 675,000, of whom 430,000 men, chiefly from the draft, will be necessary as replacements during the coming fiscal year.

Monthly draft calls have recently been increased. In July, 1951, only 15,000 men were drafted. The August quota of 22,000 has been raised to 35,000 with 7,000 going to the Marine Corps. The September quota is 34,000, of which 6,000 are for the Marines. In October, 41,000 are to be called, with 5,000 of that number going to the Marines. A rise in the monthly draft quota to 65,000 men has been predicted for the near future, and it is probable that monthly quotas will at least continue to run above 40,000. Here again, circumstances as they develop will unquestionably affect ultimate decisions.

c. National Guard.

The strength of the National Guard on 30 June 1951 was 235,000 men, organized in 3,588 units. Most of these are organized as infantry divisions or RCT's and their supporting units. The following are the

organized Guard Divisions, those now active being marked *.

26 Mass.

27 N.Y.

*28 Pa.

29 Md., Va., W. Va.

30 Ala., Miss.

32 Wis.

33 Ill.

34 Iowa, Nebr.

35 Kan., Mo.

36 Tex.

37 Ohio

38 Ind.

39 La., Ark.

*40 Calif.

41 Oreg., Wash.

42 N.Y.

*43 Conn., R.I., Vt.

44 Ill.

*45 Okla.

46 Mich.

*47 Minn., N. Dak.

48 Fla., Ga.

49 Calif.

51 S.C., Fla.

49 Armored Tex.

50 Armored N.J.

In addition, the following non-divisional units are projected:

21 RCT's

103 Maine

107 N.Y.

111 Pa.

114 N.J.

149 Ky.

150 W. Va.

157 Colo.

158 Ariz.

163 Mont.

166 Ohio

176 Va.

178 Ill.

182 Mass.

195 N.H.

196 S. Dak.

278 Tenn.

295 Puerto Rico

296 Puerto Rico

298 Hawaii

299 Hawaii

The allotted strength of a Guard Division is 13,941 men; a Guard RCT is allotted 3,465 men. But the 1952 budget permits 100% officer strength and 50% enlisted strength for all units now organized or authorized, not including units on Federal duty. The proposed strength of the National Guard by the end of fiscal 1952 is 325,000 men. The additional manpower

is to be recruited in the following manner:

Returning guardsmen	28,583
Returning guardsmen with incompleted terms of state enlistment	15,000
New recruits for present 3,588 units	26,000
New recruits for 325 new units	10,000
Additions from pool of 150,000 returnees	4,806
Total	84,389

The training of National Guard units is treated in the discussion of the Army training program. During the summer of 1951 approximately 4,000 Guard units trained at summer camps across the country. At Pine Camp, New York, alone, 65,000 guardsmen and reservists received 2 weeks' training.

More than 100,000 National Guard troops have been called to active duty with the Army since the outbreak of war in Korea. 1,224 National Guard company-size units had been called by 30 November, 1950. These units, averaging 50% of T.O. strength, were filled by men drawn from the O.R.C. In addition to the 6 National Guard divisions already federalized, General Collins has predicted that two additional divisions may be called up during the current fiscal year. These divisions will probably be New York, Texas or Illinois guardsmen.

National Guard divisions, including those about to be sent overseas, have been used as replacement pools for units already in combat. The 28 Infantry Division (N.G.) has sent 6,000 trained draftees to other units. The 31 Infantry Division (N.G.) has lost 4,300 men as replacements to other units; while the 43 Infantry Division (N.G.) has trained 6,500

draftees and sent them elsewhere. Clearly, National Guard units which are used for such purposes should be considered a part of the basic training program.

d. Organized Reserve Corps.

New policies for reserve forces were announced by the Secretary of Defense in April, 1951. They are stated in Department of Defense, Office of Public Information, release No. 516-51. Some of the policies announced have already gone into effect, but many await authorization by Congress before the contemplated revision of reserve policies can be completed. A fundamental change which the new program will effect is the division of the Reserve into Ready, Stand-by and Retired classes, based upon differing degrees of preparedness and availability. Recent changes in regulations concerning the Organized Reserve Corps have generally been steps in the direction of re-organization along the lines laid down by the basic policy statement.

On 1 March 1951, the O.R.C. reported 158,989 reservists in organized units and 313,931 individual reservists, including honorary and Inactive Reserve. The total for the Active Reserve was 293,320 men. The budget for fiscal 1952 provides for an end strength of 205,000 active members for the O.R.C. "Early ready" units are to be at 100% officer and 50% enlisted strength.

By 1 January 1951, 783 Reserve units had been called to active duty, with 5,477 officers and 20,222 enlisted men. Many reservists have been called up on an individual basis, to strengthen National Guard and other outfits. 33,410 officers and 94,843 enlisted men had entered active service on this basis by the same data. Additional units and individuals have been called up since January - the number of units was 852 by March - but the bulk of those likely to be drawn upon were probably called in the early months of the war. Present plans call for the release of 100,000 enlisted rese[illegible] as the dr[illegible] training programs make possible their replacement by other perso[illegible]

3. Army Training Program

To an extraordinary degree the efficacy of any Army depends upon the character of its training program. This is particularly true of countries lacking a strong military tradition or enjoying relatively high standards of civilian life under urban conditions. Men from such backgrounds must be thoroughly trained to the rigors of life in the field and to the habits of discipline and cooperation so vital to successful military operations.

The process by which civilians are being made into soldiers deserves attention as a clue to the caliber of the fighting men the United States is capable of putting into the field.

Like many other aspects of the Army, its training program has been considerably revised since the outbreak of the Korean War. Increases in the draft and in the demand for combat soldiers have necessitated enlargment of training facilities. The training establishment in the Zone of the Interior has more than doubled since June, 1950. In July, 1951, the basic training period was increased from 14 to 16 weeks to provide more time for combat training. Qualitatively, too, basic training has been improved. Greater emphasis is being put on physical conditioning, infiltration courses, night problems and other exercises simulating combat conditions, notably the use of live ammunition in training exercises. In recent months veterans from Korea have been brought home to assist in the training of recruits. These men have been critical of the program for its failure adequately to prepare men for combat; and, with their aid, trainees are now receiving more realistic preparation. Commanders responsible for the training program have kept in close touch with developments in Korea and have constantly recommended changes to bring training more closely into line with the practical lessons learned there.

At present there are 16 training and indoctrination centers handling recruits. Ten of these are operated by the training divisions listed ~~under~~ in Appendix V, Zone of the Interior. As noted there, these divisions, whether designated as Infantry, Armored or Airborne, all handle general indoctrination, basic infantry combat training, squad tactics and subjects common to all arms and services. The other basic training centers are located at various service schools, where the same program is carried on for the first six weeks. At the end of this period recruits selected for specialized training are released and sent to the special service schools or to specialist training units for the remainder of the training period. Those who are to remain in the Infantry, or who are candidates of officer of NCO training, continue the regular basic training course. The latter portion of this course stresses training under field conditions and in larger units.

Between 30,000 and 35,000 men are now being turned out monthly by the basic training program; and it is expected that the number will reach 50,000 per month before the end of the year. The chief difficulties encountered to date have been the lack of experienced cadres and of sufficient weapons, especially of new types, for the training centers. As production increases and more veteran combat soldiers are brought into the program these problems should disappear. There have been scattered complaints of facilities inadequate in other respects, such as housing, but these have been largely the result of rapid expansion and will probably be corrected in time.

Special service centers or schools exist for each branch of the service. At these centers advanced training in the weapons, techniques and duties of the branch is given. The following are the stations and branches of the special service schools:

Ft. Benning, Ga.	Infantry
Ft. Knox, Ky.	Armor
Ft. Sill, Okla.	Artillery & Helicopter
Ft. Bliss, Texas	AAA & Guided Missile
Ft. Belvoir, Va.	Engineer
Aberdeen Proving Ground, Md.	Ordnance
Ft. Lee, Va.	QM, AG
Ft. Eustis, Va.	Transportation
Ft. Monmouth, N.J.	Signal
Ft. McClellan, Ala.	Chemical (effective 15 October 1951)
Edgewood Arsenal, Ind.	Chemical
Camp Gordon, Ga.	Signal & MP
Ft. Sam Houston, Texas	Medical
Ft. Lewis, Washington	Clerk-Typist
Ft. Benjamin Harrison, Ind.	Finance

Officer candidate schools are now in operation at the Infantry School, Ft. Benning; the Artillery School, Ft. Sill, and the Army General School, Ft. Riley. Additional officer candidate schools will be opened at the Signal, Engineer and Armored Schools, 1 September 1951. A five-month course is given officer candidates, who will now number approximately 8,000 a year.

In addition to the branch service schools the Army operates a number of specialist schools and colleges to train officers and some enlisted men in complementary techniques. These specialist schools are the following:

*Armed Forces Information School, Ft. Slocum, N.Y.

Army Language School, Presidio of Monterey, Calif.

Army Security Agency School, Carlisle Barracks, Pa.

* In cooperation with Navy and Air Force.

68

CIC School, Camp Holabird, Md.

Signal Photo School,

Special Service School, Ft. Monmouth, N.J.

*Strategic Intelligence School, Washington, D.C.

Quartermaster Subsistance School, Chicago, Ill., QM Depot

Army Medical Department Research & Graduate School,
Washington, D. C.

Psychological Warfare School, Ft. Riley, Kansas

Joint service schools, training senior officers in joint and combined operations, strategic planning and logistic-economic factors affecting national policy are:

National War College, Carlisle Barracks, Pa.

Armed Forces Staff College, Norfolk, Va.

Industrial College of the Armed Forces, Washington, D.C.

The Command and General Staff College, Ft. Leavenworth, Kansas, trains Army officers in tactical and staff operations at a somewhat lower level.

This training provided by the schools listed is primarily individual in nature, concerned with acquainting the individual soldier with the knowledge and techniques necessary for the best performance of the functions assigned him. At least equally important is group or unit training in tactical operations at all levels. Only through such training can the officers find the opportunity to put their knowledge of tactics and planning to the test of practice, and both officers and enlisted men form the habit of working together as a unit in cooperation with other units. Likewise, the lessons learned in the specialist branch schools are here put to use in a more realistic way. Unit training, then, supplies a test of individual capacities at the same time that it prepares

* In cooperation with Navy and Air Force.

the unit for combat operations. In every sense, operations of this type are the keystone of the entire training system.

Unit training may take several forms. In some instances, divisions or other units set up special schools to train all, or a part of, their men in some particular technique. The 1 Arm. Division, Ft. Hood, has established both a Chemical Defense School and a Ranger Training Program for its men. Units may be assigned to a particular locality to take advantage of its geographical or climatic peculiarities for training purposes. Examples are Camp Carson, Colo., where units are trained in mountain and cold weather warfare, or the Army Arctic Training Center, Big Delta, Alaska. Camp Irwin, Calif. has recently been reactivated as the Army Armored Combat Training Center and units of the 43 Division, shortly to embark for Europe, have been sent there for tactical training in the desert. It is, perhaps questionable whether the desert is the ideal place to train troops few of whom are likely to see combat under desert conditions; but it may be the only practical place from the point of view of availability.

At a higher level of training joint maneuvers, such as "Operation Southern Pine" currently in progress in North Carolina in which elements of the 82 Airborne, the 11 Airborne and the 28 and 43 Infantry Division are participating, provide opportunity for experience in cooperation for large-scale operations and for testing the validity of previous training. Such maneuvers, furthermore, approach as closely as possible to operations under actual combat conditions. Their value lies in the accuracy with which they reveal flaws in training which need to be eliminated before units are committed to the line. For instance, early stages of the Southern Pine operation showed a serious breakdown in air-ground co-ordination through shortages and failures in radio equipment. Five field exercises of this kind are planned as the culmination

of training for major units before July 1952.

Even after units are ready and have been shipped overseas, training programs are continued to keep them ready for action. In Japan, the 40 and the 45 Infantry Divisions, whose departure from the ZI was rushed, are continuing their training at Camp Sendai. In Germany, a German army training area at Grafenwoehr has, until recently, been used by American units of regimental size or smaller. A new area is to be used in the future. This is presumably at Baumholder, west of the Rhine, where elements of the 4 Inf. and 2 Arm. Divisions are now in training. The 1 Inf. Division, in Germany since 1945 on occupation duty has been trained in airborne operations and is now capable of packing and loading all its equipment except the 155 mm. howitzers. This training may well have been carried out with any eye to rapid evacuation in the days when the division was almost alone in Germany. Indication of the nature of future training overseas is given in the report that the 28 and the 43 Divisions, after their arrival in Germany this winter, will undergo special training in dealing with airborne attacks in their rear. In addition to such operations, less spectacular forms of training are constantly in progress at the unit level.

Also in Europe, the Army operates a group of schools and training centers whose object is to maintain a high level of competence and to provide opportunities for advancement for able men. These are:

Ansbach, EUCOM Signal School

Bamberg, EUCOM Ordnance School

Eschwege, Ordnance School

Garmisch, Intelligence and MP School, Engineer School

Hammelburg, Army Training Grounds

Kitzingen, Kitzingen Training Center

71

Mannheim, EUCOM Transportation School

Munich, Constabulary NCO Academy

Oberammergau, European Command Intelligence School

Vilseck, Tank Training Center.

Foreign soldiers have participated in the training offered at these centers, but there has been no participation to date of allied and U.S. units in combined maneuvers. Combined maneuvers of British, French and U.S. troops are scheduled for 14-23 September 1951.

A discussion of the Army's Information and Education program is not considered to fall within the limits of this report. The National Guard, R.O.T.C. and O.R.C. programs, since they are expected to account for over 350,000 men in 1951, are worthy of notice. The National Guard program is based on a weekly drill supplemented by occasional week-end training periods and by an annual two-week field training period. Since these units are at far from full strength the value of their training is questionable, or at least variable. Of the four National Guard divisions called to Federal service since June 1950, none is yet considered ready for combat duty; and all have undergone extensive training periods in spite of the training previously carried on. On the other hand, the 278 Infantry Regt., Tennesse National Guard is considered a crack outfit. After training at Ft. Devens and Pine Camp, one of its companies was assigned to Camp Buckner, West Point, in June, 1951, for two months training with the cadets of the United States Military Academy.

The Organized Reserve Corps sustains a somewhat similar training program, based on a combination of weekly drills and an annual field training period. Evaluation of the program is impossible since there have been no reports on Reserve units in action and since the majority of Reservists have been called as individuals and assigned to Regular Army or National Guard units. It would appear, however, for various reasons including the lack of sufficient

funds, that the Reserve program to date has only begun to develop its full potentialities. (For further discussion of the National Guard and O.R.C. see section on Manpower.) The R.O.T.C., which now supplies more than 60% of the newly-commissioned officers of the Regular Army, has become a crucial factor in Army plans and training. After four years of military training in college and one summer of field training, the men from this program are absorbed into the Regular Army where they are providing an increasing proportion of the necessary leadership.

Finally, it may be observed that with training, as with every other aspect of military preparedness, "the battle is the pay-off." The effectiveness of Army training receives its ultimate test in combat, while the lessons learned there must be incorporated into any realistic training program. The battlefield is, consequently, the most important training area of all. In this respect, the Korean War has exerted an undoubtedly beneficial influence. It has established practical standards against which the whole training system can be measured. And it is now beginning to supply combat-tested cadres, personally familiar with the latest developments in warfare, to bridge one of the most important gaps between the training centers and the front lines.

A late addition to information concerning training:

1. Training manoeuvers scheduled for the coming year and referred to above have been identified as:

a. Operation Sand Hill, involving 2 Infantry and 1 Airborne divisions — approximately 110,000 men.

b. Operation Snow Fall, scheduled for January-February, 1952, involving 1 Airborne division, 1 RCT and 1 Armored Cavalry regiment (30,000 troops) in winter operations.

c. Operation Long Horn, with 1 Armored division, 1 Infantry division and 1 RCT at Ft. Hood, Texas, stressing air-ground training for 80,000 troops.

d. Operation Grand Joint, [illegible]00 troops, plans for which are still to be made.

F. RECENT DEVELOPMENTS IN ARMY WEAPONS AND EQUIPMENT.

Weapons and equipment common to all services are treated in Section V of this report. The developments with which this section is concerned are primarily those affecting the offensive weapons of the Infantry, Artillery and Armored branches. Modernization of weapons and equipment in these categories was already under way before the beginning of the Korean war. New tanks were being developed and tested, while many of the basic infantry weapons were undergoing striking changes.

Events in Korea have provided an enormous incentive for the perfection and production of experimental models. At the same time, the Army has been forced to draw heavily upon its slim stock of modernized equipment. It was front page news when a new and improved bazooka was rushed to the front in the early months of the Korean war. Units stationed in the Zone of the Interior were stripped of their equipment to supply the combat forces. To date, only one battalion of T-46 Patton tanks, already on the way to obsolescence, has been reported in action in Korea. U. S. forces in Europe have no tanks of the latest models; and the 28 and 43 Infantry divisions, soon to sail for Europe, lack their full TO and E allotments of even basic infantry equipment. Tank production is currently running 20% behind schedule.

Despite these difficulties, progress is being made; and the following pages and tables will show the extent to which new weapons and equipment are becoming available. In general, two fundamental trends are discernible in recent developments in this field. In the first place, increased mobility for infantry and armor has been considered of great importance. The lightening of infantry weapons, the use of armored personnel carriers, the improved engines in the new tanks, air training for infantry divisions and increasing use of helicopters for transport and tactical purposes

 74

all conform to this trend.

The second trend is the effort to increase the fire power of combat troops. For the Infantry, this takes the form of increased rates of fire for most basic infantry weapons and larger caliber weapons, i.e., .60 cal. machine gun and 105 mm. recoil-less rifle. In artillery and tank armament, the trend takes the form of higher muzzle velocities for the guns.

Specific information concerning improvements in certain weapons and equipment follows:

1. Small Arms and Infantry Equipment

The two main trends in connection with infantry are:

a) to increase the mobility of the individual soldier

b) to increase the fire-power of the individual soldier

a. As a means of increasing the mobility of the individual soldier, including the economy of transporting him by air, it is hoped to reduce the weight of his equipment and arms by as much as 65%. Items in this program are:

New helmets in which steel is replaced by an aluminum shell with nylon-plastic lining, which weighs 8% less and gives 15% more protection.

New entrenching tools which reduce the solider's load by 3 lbs. 14 oz.

New 3.5" bazooka, lighter than the old 2.36".

Lighter rifle, pistol, machine gun and ammunition.

b. It has been estimated that sometimes 75% of available rifle fire-power is not used by riflemen in combat. This must be overcome chiefly by

75

training, but the introduction of new weapons has so far affected the situation that while the division has increased since World War II from 13,500 to 18,900, its fire-power has increased 50%.

Setting aside weapons well-established and well-publicized by the end of World War II, information on which is available in the Army Almanac and in Barnes' Weapons of World War II, the following are worthy of comment:

M2, .30 cal. Carbine. Selective automatic version of the semi-automatic carbine; 30 round magazine; cyclic rate of fire 750 rounds per minute.

T20? (or G25?), .30 cal. Rifle. Fully automatic; 2½ lbs. lighter than the Garand; 20 round clip; 750 rounds per minute. Expected to replace both rifle, M1 and carbine and perhaps the light machine gun.

M18, 57 mm. Recoilless Rifle; weight 40.25 lbs., maximum range with heavy anti-tank ammunition, 4400 yars; muzzle velocity, 1200 feet per second; elevation +65°, -27°.

M20, 75 mm. Recoilless Rifle; weight 103 lbs.; maximum range with high-explosive anti-tank ammunition, 7000 yards; muzzle velocity 1000 feet per second; elevation +65°, -27°.

105 mm. Recoilless Rifle; weight 750 lbs.; length 13 feet; range, 5 miles; rate of fire 10 rounds per minute. Jeep-mounted. Primarily an anti-tank weapon, which can K.O. any known foreign tank.

.60 cal. Machine Gun. Fires faster and hits harder than the .50 cal. which it is expected to replace; it has higher velocity and flatter trajectory. Furthermore, the barrel can be unscrewed without tools and another substituted which fires

76

20 mm. shells. It can be set up in position and fired by remote control, having been loaded with enough rounds to operate all night under normal conditions.

Anti-tank grenade now being purchased from Belgium. Fired from M1 rifle; range about 100 yards; shaped charge 1½ lbs.; pierces 200 mm. of tough armor. The grenade is peculiarly ridged and not readily deflected from the most sharply angled armor plate.

The army has ordered 6,918 sniperscopes, infrared telescopes mounted on M2 Carbine and powered by springwound 10 lb. generator. The operator wears special goggles which allow him to see the infrared ray in the dark.

2. Mortars 77

The effort to lighten the soldier's load has led to experiments with a titanium baseplate for the 60 mm. and 81 mm. mortars. See the report on chemicals for further information.

A second important development affecting mortars is the incorporation of the 4.2" mortar into the infantry regiment. Formerly, the 4.2" was operated exclusively by personnel of the Chemical Warfare Service, working in close cooperation with the infantry. Since 1945, a Heavy Mortar Company has been assigned to each infantry regiment, replacing the anti-tank companies of World War II.

Monster mortars include the 250 mm. mortar, built for use against the Siegfried line, which was never actually employed in combat, and the 914 mm. mortar (Little David) which did see action in World War II. While it is rumored that the latter may be capable of firing atomic shells, it seems more probable that the development of guided missiles and atomic artillery will make the large mortars obsolete. A reported new locator which finds and directs fire on mortar emplacements, if proved practicable, should contribute to this result.

3. Artillery

The increases in range and in muzzle velocity which are the goal of most efforts to improve artillery weapons, require similar increases in the size and weight of the guns. This situation presents a challenge for the development and application of new materials and techniques if mobility, one of the vital aspects of modern artillery, is not to be seriously reduced.

Almost all of the basic artillery weapons now in use are World War II models. Modifications are dependent primarily upon ballistic and metallurgical experimentation to develop light-weight, erosion-resistant alloys suitable for high velocity, rapid fire. Experiments in new types of shells and barrels were well under way in 1945; but little of the knowledge gained has as yet appeared in actual firing pieces. It may be that, in the long run, the guided missiles program will develop a more effective answer to the problem of high-velocity, longer-range bombardment.

A few new artillery pieces, or modifications of old ones have already appeared, in addition to the 57 mm. and 75 mm. recoilless rifles discussed in the section on small arms. In general, the new developments reflect the emphasis on longer range, higher muzzle velocity and greater mobility.

The Anti-tank Gun , M-27, is a 57 mm. (?), single-shot, hand-loaded weapon, capable of firing 10 rounds a minute to a maximum range of 5 miles. Another new anti-tank weapon is the 105 mm. recoilless rifle, listed under small arms. An 8-inch gun weighing 52,620 pounds is now in use, whereas the earlier model weighed 69,300 pounds.

During World War II the Army resorted to the use of guns mounted mounted upon tracked vehicles to provide a highly mobile, self-propelled artillery force. A new 155 mm. Howitzer Mortar Carriage, M-41, has since been added to this group.

79

4. TANKS AND ARMORED CARS

At the end of World War II the United States had on hand 28,776 tanks of all types. 17,901 of these remained on 1 July 1950, of which 6,600 were suitable for combat use. The tanks which first saw action in Korea were almost entirely World War II models, since the Army's new tank development program was not yet fully under way. Since the outbreak of war the funds and the stimulus necessary to bring the program into full operation have been supplied. The annual appropriation for tanks and other combat vehicles rose from $33,360,949 in fiscal 1950 to $2,322,954,552 in fiscal 1951. The estimated budget for fiscal 1951 allots $4,201,456,000 for this item. Despite the increase in appropriations and the fact that the Detroit Arsenal was said to have the capacity to turn out as many as 5000 tanks in the first 12 to 18 months of production, the new tanks are coming off the lines more slowly than was expected. Less than 600 tanks were produced in 1950. In December it was announced that the Army had been unable to meet its minimum requirements in modernized equipment. As recently as July, 1951, tank production was officially reported 20% to 25% behind schedule. Unofficially, the major bottlenecks were identified as the casting of armored hulls and fabricating of the electric wiring systems.

Nevertheless, the past year has seen notable progress from the stage of planning to that of actual production. Production lines are being set up at four new plants and tanks are already being turned out by at least two of them, the Cleveland Arsenal, operated by Cadillac, and the American Locomotive Co. We are said to be preparing capacity to produce 35,000 tanks a year, although nothing like that amount is being ordered at present.

A table of detailed information concerning recent tank and armored car models appears in ~~the~~ Appendix VI.

The most important general trend in recent planning for the improvement of tanks and other armored vehicles has been the evolution of the concept of the tank-automotive "family." Basic to the concept is the application of the principle of interchangeability of parts between the various types of combat vehicles. Transmissions, cross-drives, wheel assemblies and even engines are now being made for use in armored cars and light, medium and heavy tanks. The advantages of such a program are obvious. Speed and economy of manufacture, ease of repair and availability of spare parts are among the more important. Other new developments of a more specific nature are summarized in the following paragraphs.

I. Tanks.

Two new light tanks, the T-37 and the T-41, have been produced in recent years to supplement the standard M-24. The M-24 is widely used and is still in production in small numbers. The first production model T-41s appeared in March, 1951, and full scale production is now under way. Over 1,000 of this type have already been ordered. No information concerning production of T-37s has been obtained.

Several important developments have taken place in medium tanks. The World War II Sherman tank, M-A3E8, has seen duty in Korea but it is no longer in production. The Pershing, M-26, is obsolete. M-26s are being converted into M-46 Pattons, of which only one battalion has thus far been reported in action in Korea. Conversion includes replacement of the old engine by a more powerful one (see section III, Engines) and the installation of a cross-drive, torque converter transmission and "wobble-stick" steering device which permit the tank to turn completely around without moving forward or backward. The M-46 is also capable of travelling through water to the depth of six feet, through

the use of a special Fording Kit which includes synthetic rubber shields, intake and exhaust stacks and sealing compounds. The capabilities of the Patton are indicated by the report that, in direct tank vs. tank action in Korea, Pattons have scored a knock-out margin of 18-1 over Russian T-34s.

Yet even the M-46 is little more than an interim model. The M-47, Patton II, is probably superseding it on the production line. The Patton II mounts an improved gun; and the hull has been remodelled to enlarge the interior and to reduce the likelihood of point-blank hits by increasing the angle at which a shell is likely to strike. The 1951 appropriation is sufficient to pay for about 5000 M-47s.

About another medium tank designation, T-42, less is known. Probably the number was applied to pilot models of the M-47, although there is some indication that it may be an entirely different tank. The best evidence suggests that the T-42 and the M-47 are one and the same; but the question is in need of further clarification.

In the field of heavy tanks new models have appeared, although the Army is reluctant to commit itself heavily. Several considerations are responsible for this position. Cost is, of course, an important factor, since each heavy probably costs about $300,000 -- a large amount to venture against destruction by a single well-placed shot. In addition, the need for such giants is thought to be relatively small. Few targets are worthy of such heavy armor. A small number of T-43s have been ordered; but few are likely to be secured unless experience proves that the new medium types are not capable of doing everything expected of the ~~heavie~~ heavies. A second heavy model is the T-30, which mounts a 155 mm. gun.

II. Armored Cars.

Interest in armored cars as personnel carriers has been heightened by

the development of the VT fuze. Against an enemy using VT-fuzed shells, infantry riding on tanks or deploying on foot is at a great disadvantage. Armored personnel carriers make it possible to transport troops close to the front lines without risk from this type of ammunition. They also afford protection against small arms, a fact which makes them of particular value in a war of rapid movement or for operations in areas subjected to guerrilla activity. The Armored Personnel Carrier, T-18E2, capable of carrying a squad of 12 men, is the latest vehicle of this kind. The tracked carrier, Armored Utility Vehicle, M-39, although it is still organic to armored units, has no overhead protection. It may probably be considered obsolescent.

III. Engines.

A new 12-cylinder, V-type engine, using 80-octane gasoline, rated at 810 horsepower and 1040 horsepower with the use of a supercharger is being produced by Continental Motors Corp. In line with the trend toward interchangeability this engine is used in recent model tanks, T-41, M-46, T-30 and probably T-42 and T-43.

IV. Armament.

Increasing use of high-velocity guns is apparent in the field of tank armament. It has been estimated that new tank guns have a 30% higher velocity than earlier models. M-46s, M-47s, T-41s and very likely, T-42s and T-43s, mount super-high-velocity weapons.

V. Note on Sources.

The Hearings of Congressional Committees on Appropriations have been the outstanding single source of information concerning tank production and development. Since the information they contain is of an official nature, they have been used also wherever possible as a check against data collected

elsewhere. Statistics of appropriations for tanks and other combat vehicles and of unit costs of some items have been assembled from the hearings. A complete cost and production analysis of the whole tank program is not possible on the basis of the data so far collected. Such a project might well be given a high priority if the present study were to be continued. An important source for such an analysis, and one not available for this report, would probably be the various reports, magazines or news bulletins published by the manufacturers associated with the tank program. Using information collected there, together with material presented at future Congressional hearings, it might be possible eventually to construct a more complete picture of the tank program than can be presented here.

Scattered news reports have supplied occasional information concerning tanks; but, aside from the Hearings referred to above, the service magazines Ordnance and Armor have made the most important contributions to our knowledge of the tank program.

Liaison Aircraft

The use of small aircraft for liaison and artillery observation missions was an important tactical development of the second World War. Recent experience in Korea has confirmed the usefulness of these craft, developed new uses for their peculiar capabilities and stimulated a general effort to speed production of new and better types. The fourth Armed Forces supplemental appropriation bill for fiscal 1951 included $13,750,000 for Army aircraft of this kind. Contracts have been let and production of the latest models is under way. The appended table (Appendix VII) shows the characteristics of the types now in military use or on order for the ground forces.

Liaison aircraft are divided into two basic categories: standard, fixed-wing types and rotary-winged, or helicopters. Increasing use of the latter has been highlighted by events in Korea; and it seems likely that rotary-winged craft will ultimately replace most, if not all, of the fixed-wing planes. Helicopters possess advantages of ability to hover, to proceed at lower speeds, to rise and descend vertically, which make them particularly adapted to difficult terrain.

Helicopters and fixed-wing liaison planes are now assigned to every combat division. At least twenty helicopters are used by Division Hq. and Division Artillery. In Korea, helicopters have dramatically proved their usefulness for evacuation of the wounded. In addition to liaison and observation for the artillery, many new uses have been developed for the helicopters by Army and Marine commanders. Reconnaissance and supply problems have been greatly facilitated by their use. They have been used in establishing and maintaining advance OP's and patrols and for laying telephone wire. They are frequently discussed as potential troop carriers, and large models with detachable pods are being developed to

95

perform this mission.

In Korea, helicopters have been stationed from one-half to five miles behind the front lines, and their bases are moved closely behind the front. This, and the fact that they are in constant use, has created difficult problems of maintenance and repair. However, increasing production both of the craft themselves and of spare parts should make possible the solution of many present difficulties. The automatic pilots being developed by Sperry, Goodyear and other companies will reduce the need for pilots, allow the pilot more time in flight for other activities and make possible takeoffs in dark or bad weather.

To train helicopter pilots in close cooperation with ground troops an Army Helicopter Aviation Tactics School has been established at Fort Sill in connection with the Artillery School. Helicopters have been assigned to units in the Zone of the Interior, notably the First Army Aviation Squadron at Fort Monmouth; but all suitable craft have been sent to Korea for combat service.

Note on American Helicopter

This magazine was the source of virtually all information concerning the production and use of helicopters. Its yearly December issue regularly prints pictures and specifications of the outstanding types, both for military and for civilian use.

 86

G. COMMENTS ON PRINCIPAL SOURCES

1. The Army Almanac

A point of departure is furnished by The Army Almanac, Government Printing Office, 1950. Since most of the information contained is current as of October 1948, it must obviously be used with caution, but such features as its Tables of Organization and Equipment (T/O & E) furnish a basis which may then be revised by new information from whatever source. A large part of the volume is taken up with historical and other extraneous material; the following is a list of the passages useful for this investigation:

pp. 16- 30	The National Military Establishment
pp. 268 f.	Table 40. Infantry Division Organic Composition
p. 275	First Cavalry Division authorized Strength, April, 1948
p. 277	Armored Division T/O & E 17N, 8 Oct., 1948
p. 279	Airborne Division T/O & E 71, 16 Dec., 1944
p. 305	Oversea Commands (map p. 307)
p. 313	Table 42. National Guard Troop Basis as of 1 Sept., 1948
p. 314	Table 43. Allocation by States as of 1 Sept., 1948
pp. 335-400	Army Educational System (locations and functions of the various schools, passim, with historical material)
pp. 401-408	Lists of Posts, Camps and Stations in the U.S.
pp. 517 f.	Table of elements of Infantry Divisions in World War II
p. 573	Table of Armored Divisions in World War II
p. 585	Table of Airborne Divisions in World War II

There are also charts which may prove convenient:

p. 8	Schematic Functional Relationship of Elements in National Security
p. 9	Organization of National Security

87

1. The Army Almanac. (Cont.)

p. 30 Organization of the Department of the Army (1 April, 1948)

The chart on p. 8 has one detail highly suggestive for participants in this enterprise. The Central Intelligence Agency is found on the extreme left, and from it to the National Security Council is a firm black line labelled "Intelligence". From the Agency to the Chiefs of Staff, on the other hand, runs only a dotted line labelled nothing at all, while there is no suggestion of contribution from the Joint Chiefs of Staff to the Agency. If the description of the Agency on p. 7 is read with this in mind it will give grounds for doubt as to whether the attempt to coordinate and disseminate intelligence has been wholly successful. If it does not succeed, the extravagance of duplication and even competition of various agencies of intelligence will continue to add its share to the confusion of national defense.

2. Army Orders

An excellent source for the location of units is the Army Orders, published weekly by the Army Navy Air Force Journal and the Army Navy Air Force Register. When an assignment is to a division or higher command the number and location of the unit is always given. The location (or APO) of lower units is given and the assignment to a division is specified often enough so that when such notices are accumulated an impressive proportion of the composition of divisions is fixed and a large number of unattached units located. Similarly the association of Army Post Offices, sometimes with units and sometimes with stations, added to the association of units with stations allows a number of important APO's abroad to be pinned down (a list of APO's

published in The Air Officer's Guide, Third Edition, The Military Service

2. Army Orders. (Cont.)

Publishing Co., 1950, pp. 434-438, is a useful beginning, but can be both expanded and revised from Army Orders). Given the composition of a normal division from the T/O & E, regiments and battalions may often be confidently assigned to divisions whose stations they share. This is not always the case, however, since component units are sometimes detached for specialized training, and the presence at a post of a number of training units, seldom specified as such, may make it impossible to say which battalion of artillery or engineers is the one organic to the post's division. Of course, the movement of the division will ultimately make that point clear. The composition of a division in World War II (given in the Army Almanac) will also sometimes be of service in determining its present composition, since a considerable number of units are certainly still with the same division.

The present study concentrates on combat units of the size of battalion and above, but a great deal more information is available if there were time to assemble it. The disposition of such forces as Medical Corps, Signal, Ordinance, and Quartermaster would, of course, be important for a complete picture. Much might be done with units identified only as AAU, ASU, TSU. The function of many is specified; by observing the branch and the rank of officers assigned one can make diductions as to its nature and its size: e.g. an AAU to which only Signal Corps officers go will be of quite a different kind from one recruited from all branches; the assignment to a mixed group of a Lt. Col. of the Chaplains' or Judge Advocate General's Corps means a body of some size and importance. Personnel files could be carried down to any point desired. Ideally, if there were unlimited time, one could

2. Army Orders. (Cont.)

learn a great deal about the training program from following the movement of junior officers. A more limited study might be made, with profit, of such special bodies as those at Trieste or Sandia Base.

Both the Journal and the Register print material supplementary to that in the orders. Special articles, reports from posts, notices of decorations, social events, weddings, and obituaries often give valuable data. Since these are not necessarily identical in the two periodicals both should be consulted. The orders, of course, are the same, though the second version is a useful check when an item is suspect - typographical errors occur and are sometimes misleading.

It takes about an hour and a half to go through an issue of the Journal and extract and consolidate the information of the level here presented. Another half hour should suffice for the Register in addition. To extract all the information from both papers would take a great deal longer - four times as long, at a guess. Whatever level of information is desired the search should be systematic; the mere noting of conspicuous items will not give a sound body of information.

3. Hearings of Congressional Committees

In all matters except the location of individual units, the hearings of Congressional Committees are likely to be the primary source of information. Many facts which eventually appear in newspapers and periodicals were originally revealed in these hearings. The most valuable single source is the hearings before the Appropriations Committee of the House of Representatives. All of the hearings on Army appropriations for 1950, 1951, and 1952 have been read for the purpose of this report. Hearings of the Senate Committee on Appropriations,

8. Hearings of Congressional Committees (Cont.)

which have been read for 1950 and 1951, contain little information not already covered in the House Committee. Hearings of the House and Senate Armed Forces Committees, several of which have been read, are valuable in parts, but ten to contain much irrelevant and no-factual material.

Information may be gained from these sources either from direct statements of facts or by inferences from several separate statements. The latter method is particularly applicable to the interpretation of statistical tables, and to discussions preceding and following portions of the hearings omitted from the record. Much of the material given above concerning tanks and tank production is of this inferential nature. The suggestion that 1951 appropriations provide for approximately 5,000 T-47 medium-gun tanks is an inference from the following facts, all stated separately in 1951 and 1952 hearings:

a. 1952 appropriations include a deficiency allotment of $123,000,000, applying to a total 1951 appropriation of $2,838,000,000 for tanks and other vehicles.

b. The deficiency applies essentially to a contract for T-47's.

c. The deficiency appropriation is 4-5% of the original appropriation.

d. The deficiency percentage on T-47's is approximately 10%.

e. The original appropriation for T-47's was about $200,000 per unit.

It is evident that an inference based on so many disparate facts, not all completely clear, is highly uncertain. Nevertheless such procedure is necessitated by the nature of this investigation. In a continuing operation they would be subject to further check.

Important hearings which arrived too late for use in preparing this report are those on Military and Naval Construction before the House Armed Services Committee, and on the Mutual Security Program, before

91

3. Hearings Of Congressional Committees (Cont.)

the House Committee on Foreign Affairs.

4. New York Times and Herald Tribune

These newspapers have been read from 1 May to 24 August, 1951.

The information found in them reanges from identification of individual units to strategic planning. The chief classes of articles in which specific items of information have been found are:

a. Speeches, reports, and press interviews of government and military officials, especially Secretary Marshall, General Collins, and Mr. Charles E. Wilson.

b. Reports of hearings before the Senate and House Committees, especially those on Armed Services, Appropriations, and Foreign Affairs. (These reports are eventually superseded by the committee reports, but delay for printing makes recent reports unavailable for this project. Furthermore, occasional leaks of "off-the-record" testimony in news reports are particularly valuable.)

c. Special articles on matters of specifically military interest, e.g. activation, training, morale, or overseas shipment and action of units; new developments in arms and equipment; status of forces in overseas theaters or the Z.I.

d. Reports of hostilities in Korea. (During the period covered these have produced exceedingly little specific material. The communiques of the Army in the Far East have revealed nothing.)

e. Appointments to important commands and promotions of general officers.

f. Articles of syndicated columnists and special correspondents.

These are of different values.

92

4. New York Times and Herald Tribune (Cont.)

Middleton, and C.L. Sulzberger are the most useful. All appear in the Times.

g. Passing remarks in general articles on foreign affairs and economic matters, and other news reports in which reference to Army units is incidental; e.g. an automobile accident involving a soldier whose unit and its location are given.

All of these classes of articles are represented in the following information, found in the two newspapers for Saturday and Sunday, 28-29 July, 1951:

a. From a letter of Mrs. Anna Rosenberg to Senator Byrd of the Senate Investigating Committee on Federal Expenditures:

That two or three new combat divisions will be formed by 30 June, 1952, through improved use of weapons.

b. From Secretary Marshall's testimony before the Senate Armed Forces Committee and subsequent explanatory statements:

The U.S. will have 400,000 men in Europe by 31 December, 1952; 340,000 of this number will be ground troops.

The size and make-up of the "division slice".

The over-all value of equipment sent to our allies, and some break-down by destination and types.

The strategic concept that, as far as possible, the U.S. will provide equipment, the Allies, men. (This was "off-the-record", but published.)

c. From various special articles on military subjects:

The deactivization of the 109th AAA Bgd., of which three major units have been in federal service since May, 1951; the name of the commanding general, 33rd N.G. Division.

4. New York Times and Herald Tribune (Cont.)

93

The brigades and regiments constituting the British Commonwealth Division in Korea.

The present planned strengths of the W.A.C.

d. A report that Pyongyang radio has identified the 38th Reg. of the 2nd Division as fighting near Yanggu, and claims that it has suffered severe casualties.

e. Appointments of C/S of 1st Army and of the Commandant, Armored Center, Ft. Knox.

f. An article by C.L. Sulzberger gives the number of divisions each nation expects to have in Germany under SHAPE by the end of 1952.

g. An article by Drew Middleton, on Soviet forces in East Germany, makes incidental reference to serious deficiencies in material, especially signal equipment and transport, as evident in U.S. and British forces in Germany in winter of 1950-51.

An average of one to one and a half hours is needed to read these two newspapers each day, in order to be reasonably sure that all relevant material has been noted. Items 6 and 7 are especially time-consuming, but they are necessary for full coverage. It may be fairly assumed that nearly all matters of general national interest appear in these two newspapers. Of the two, the Times is somewhat more useful both because of the greater value of its special writers and because news reports are often published in more complete form by the Times than by the Herald-Tribune. The additional material that may be found in the Herald-Tribune justifies only a cursory reading after careful reading of the Times.

5. The New Haven Register

Experience with The New Haven Register, the only local newspaper

5. The New Haven Register (Cont.)

consulted, suggests that selected local papers can be a valuable source of information concerning the deployment and training of our armed forces. Particularly noteworthy are the announcements of promotions, assignments, decorations and locations of local men. A significant number of Army units have been located through public relations releases to home town papers when no other news of their whereabouts has appeared. Such information is often omitted by the larger metropolitan dailies which tend to ignore movements by units of less than division strength. In an area in which National Guard or Reserve outfits have been called to active duty, it should be possible, through use of local papers, to identify almost every unit and to find rather thorough descriptions of their training, weapons, and future destination. Material of this kind must be used with a degree of caution, however, since careless and inaccurate descriptions of units are not infrequent. When possible, it seems advisable to corroborate local news reports from more dependable sources. To cover the entire country through such materials is a project so large and time-consuming that it could probably be handled best and least expensively by hiring the services of a clipping bureau.

6. Stars and Stripes, European Edition

Probably the best single source of data concerning the disposition of American troops in Europe is the European edition of Stars and Stripes, which has been consulted for the period, 1 April 1951 to 12 July 1951. On the basis of items printed here it is possible to identify and locate the great majority of Army units of more than company size. While some of this information can also be secured from home publications, many units not mentioned elsewhere are freely mentioned here. Outfits

95

6. Stars and Stripes, European Edition (Cont.)

stationed in outlying areas, such as Austria and Trieste, although seldom mentioned by ordinary newspapers, are given considerable publicity.

For the identification of units, lists of promotions, awards, accidents and contributions to the American Red Cross drive are particularly helpful; but routine news stories supply enough additional information to warrant close scrutiny. Histories of the divisions and of the Constabulary make it possible to ascertain more of their assigned components. The headquarters of many units can be readily located; and these units can then be related to the appropriate military post or subpost. In this way, it is possible to draw up a rather complete list of the outfits situated in each of the main military areas.

7. Stars and Stripes, Pacific Edition

This was available from April 1 to July 12, 1951. It furnished material about the composition and location of units in Korea and Japan not available from other sources. The official communiqués were no more informative than those in the New York papers, but there were special articles and random notes which were much more valuable for the investigator. The desire to appeal to the particular pride and interests of readers in combat units has understandably led to the attempt to include as many as possible by name. The extent to which such items appear is, of course, determined by the censorship policy, of which striking examples are observable. On May 26, 27, and 28 the Corps and Divisions on the West, Central, and East Central front were listed in such a way that a good idea of the order of battle was conveyed (the East front was, and still is, held by Republic of Korea troops). Immediately after this a double

7. Stars and Stripes, Pacific Edition (Cont.)

censorship was imposed (8th Army and GHQ) with the result that until June 15 nothing was published which could give military information to anybody. With the return of single censorship on that date an article appeared giving the composition of the Regimental Combat Teams of the 45 Div. This was unique, however, and thereafter only isolated items have appeared. These sometimes lead to larger deductions; notions of the order of battle may be gleaned from the representation at ceremonies of award or from the progress of Jack Benny's show, but names of places are now completely suppressed in connection with units, and there has been nothing like the outburst of May 26-28. Quotations from papers in the United States have occasionally contributed news of interest not in the New York papers.

8. Saturday Evening Post

Harold H. Martin's article, "How we stopped the biggest Chinese offensive," August 4, 1951, pp. 29, 83-85, gives a detailed account of the two actions of April 22 and May 17 and the following days. It records the identities and movements of units, omitting only the 7 and 25 Infantry Divisions and 25 Canadian Brigade, known from other sources to be on the front. The object is obviously to give the public an adequate appreciation of a brilliant action; it would seem that the object was laudable and that the article was likely to be successful. The apparent discrepancy between its explicit information and the taciturnity of the official communiqués may be explained by the fact that this is historical while they are contemporary. The difference is largely illusory, however. Given the conditions of battle and of the terrain displacement of large units, such as the moving of [illegible] Div. from I Corps to X Corps on

8. Saturday Evening Post (Cont.)

May 17-18 must be exceptional, and it may therefore be assumed that the order of battle given in May is still substantially the order of battle of August 1. But the position of units on the front will certainly be known to the enemy very promptly through normal Prisoners and Documents channels, and presumably there is no reason why Americans should not know the order of battle if the enemy does already.

9. News Magazines

Time, Newsweek, and U.S. News and World Report have been consulted. These magazines have supplied a smattering of information regarding many aspects of the military program. Of the three, Newsweek has probably provided the greatest number of valuable items. It hs run a series of articles on manpower, equipment and other mobilization problems which have contained useful and accurate information. Its feature, The Periscope, often reports up-to-date military developments, some of which have not been found elsewhere. The other magazines have been less helpful. If analysis of military potential were extended, however, to include resources, industrial production and logistics, U.S. News and World Report would be a valuable aid. Its reports on manufacturing and business conditions are its most significant feature.

10. APO Listings

A record of APO listings can be a valuable adjunct to such a project as the present one. A rather complete list can be compiled with the aid of the Army-Navy-Air Force Journal, the various editions of the Stars and Stripes, and letters to the editors of military publications and news magazines. The Air Officer's Guide, Harrisburg, Pa., 3rd edition, Feb. 1950,

10. APO Listings (Cont.)

contains a list of APO's as of that date. This, however, is now obviously out of date; new APO's have been assigned and some of the earlier ones appear to have been nominal even at that time.

APO's should probably be considered a secondary, rather that a primary source of information; they are not always as illuminating as might be expected. In some instances, they are a sure clue to the assignment of units concerned. APO 1, New York, for instance, belongs to the 1st Division and all of its components. This tends to be true of the low-numbered Regular Army divisions, such as the 7th, 24th, and 25th. It is not true, however, of the 3rd or 5th. Later units were clearly assigned APO's without regard for their unit numbers. This practice, of course, makes location and identification more difficult and was probably meant to do so.

Even when APO and unit numbers do not correspond, unit assignments are often clarified by knowledge of their APO's. In some cases the APO can be confidently related to a general geographic area when the location of even one unit having that APO is known. Other units in the same area can then be occasionally related to the same APO; or other units having the same APO can then be located geographically. This method is not infallible, however. Two units having the same APO may be widely separated, while several APO's may serve units in a relatively restricted area. Too great a reliance upon the APO numbers can, consequently, produce real confusion. But, used with caution, the numbers can be a helpful aid in keeping in touch with the location or movements of units overseas.

Appendix VIII contains a list of APO's which have been identified, with units using the APO, and its apparent location.

1. On the Efficiency of Censorship

The investigation has revealed some successes and some failures of the system of censorship. Information on new weapons is gratifyingly hard to find. The transference of the 3 Infantry Division from Fort Benning to Korea was accomplished with no indications given in sources accessible to us. These are cases in which the advantage of secrecy is obvious. On the other hand, impressive scientific generalities have been published, doubtless with official sanction, and, for a similar reason, the movement of troops to Europe has been advertized rather than concealed.

Policy in regard to units in station is not clear. With respect to units in the Zone of the Interior there is no official publication of their positions except indirectly through Army Orders, but there seems to be no attempt at concealment which would in any case be impractical. Possible exceptions are certain Training Divisions (e.g., 5 Armd. Div.) whose component units are never identified. It seems more likely, however, that the troops in training in such divisions are not organized into units with permanent designations. Otherwise we must assume extreme differences of regulations between posts. On the whole the Army's attitude toward troops in this country seems to be that those interested will find out where they are, and need be neither prevented nor assisted. Much the same principle seems to govern the mention of troops in Europe and in Japan.

In Korea, however, the situation is quite different. For obvious reasons, the location of Corps and Division Headquarters is concealed. Furthermore, the position of troops relative to the front line is now never indicated in official sources. At the outbreak of hostilities a

11. On the Efficiency of Censorship (Cont.)

great deal of information was given out, on the assumption that the public had a ligitimate interest in the progress of battle. Communiqués grew more and more reticent as the principle prevailed that information as to the location of troops would jeopard their operations. With some fluctuations this has become so fixed as official policy that no unit in combat is named any longer in communiqués. The previous theory lingered on, however, in unofficial publications so that material rigidly excluded from releases from headquarters would appear in the Stars and Stripes, Newsweek, or the New York papers. This is clearly the wrong way around. It is useless for headquarters, which is best informed of the facts, to impose silence on itself if what it conceals is to be published by other means. One gets the impression that the difficulty is caused by uncertainty as to what should be concealed and what can be. Prima facie it would be well for the enemy to be entirely ignorant what troops faced them on the line; practically the enemy knows almost at once what troops face them. Concealment, therefore, operates only against friends, whose indiscretion could not convey the news to the enemy as fast as the normal prisoners and documents information. Posts of command, on the other hand, can be hidden until their area is covered by air observation, and the knowledge of such positions is properly restricted to the fewest possible number of people.

AR 380-5, Military Security, 6, m and o list as secret: "Information indicating the strength of our troops, air and naval forces, identity or composition of units or quantity of specific items of equipment pertaining thereto in active theaters of operations except that mailing addresses will include organizational designations" and

11. On the Efficiency of Censorship (Cont.)

"United States Order of Battle information and locations and moves affecting the Order of Battle."

Aside from breach of these regualtions, the inconsistency in their application results from the fact that they lay down no term for their observance, and it is therefore left to different authorities to determine how long after the event secrecy should be preserved.

 5956

APPENDIX I

SEE CHART APPENDIX I

APPENDIX II

SEE MAP APPENDIX II

APPENDIX III

DIVISION TABLES OF ORGANIZATION

A. Infantry Division

Entire Division	18,804
(O 958, WO 49, EM 17,797)	
Infantry	11,322
3 Regiments	3,774
3 Bns	917
3 Rifle Cos., 1 Hq. Co.	211
Heavy Tank Co. (O 6, EM 142)	
4 Platoons, 5 tanks each	
Heavy Mortar Co. (O 6, EM 184)	
3 Mortar Platoons (O 1, EM 40)	
Artillery	3,668
3 Bns 105 mm. How (18 How. each)	
3 firing Batteries (6 How. each)	
1 Bn 155 mm. How. (18 How.)	
3 firing Batteries (6 How.)	
1 AAA AW Bn	
Tank Battalion (144 tanks)	677
3 Tank Cos.	
Engineer Battalion	972
4 Eng. Cos.	
Reconnaissance Co.	170

104

B. Armored Division

Entire Division	15,973
(O 897, WO 83, EM 14,993)	
Armored Infantry	4,276
4 Bns.	1,069
4 Rifle Cos.	
3 Rifle Platoons (O 1, EM 43)	
Mortar Platoon (3 60 mm. Mortars)	
Tank Battalions	1,434
1 Heavy	677
3 Medium	757
Artillery	3,735
3 Bns 105 mm. How. (Sp)	
1 Bn 155 mm. How. (Sp)	
1 AAA AW Bn (Sp)	
Engineer Bn	1,095
Reconnaissance Bn	829

C. Airborne Division

Entire Division 16,230

(O 941, WO 56, EM 15,233)

Infantry

3 Abn Inf Reg.

Support Co.

2 Heavy Mortar Platoons (4 Mortars each)

Antitank Platoon (6 90 mm AT guns)

Artillery

1 Bn 155 mm. How.

3 Bns Abn 105 mm. How.

Tanks

2 Heavy

2 Medium

1 Reconnaissance Co.

For operations divided into assault, follow-up, and rear echelons. Assault echelon, an infantry combat team plus divisional units all capable of being landed by parachute and of holding position until arrival of the follow-up echelon.

APPENDIX IV

COMPARISON OF MARINE AND ARMY (INFANTRY) DIVISIONS

A. Marine Division Table of Organization

Entire Division	21,198
Infantry	11,265
3 Regiments	3,755
3 Bns	1,081
4 Cos.	228

Artillery

3 Bns 105 mm. How. (18 How. each)

1 Bn 155 mm. How. (18 How.)

Tank Battalion (9 tanks M4A3 85 tanks M 26)	ca 720

The reinforced 1 Marine Div. was between 24,000-25,000 men in January 1951.

B. Weapons of Marine and Army (Infantry) Divisions

April 1951

	Marine	Army
Infantry		
Carbine, cal. .30 M2	9,470	7,474
Rifle, U.S. cal. .30 m1	8,748	6,913
Rifle, automatic, cal. .30		
Browning, M1918 M2	903	412
Gun, machine, cal. .30		
Browning, M1919 A4 flexible	575	160
Gun, Machine, cal. .30		
Browning, M1917 A1	54	40
Launcher, rocket, 3.5 in. M20	376	546
Flamethrower, portable M2-2	111	—
Mortar, 60 mm. M2	81	84
Mortar, 81 mm. M1	54	40
Mortar, 4.2 in. M2	24	36
Artillery		
Howitzer, 105 mm. M2 A1	54	54
Howitzer, 155 mm. M1	18	18
Tanks		
Tank, medium M4 A3	9	—
Tank, medium M26	85	144
Gun, machine, cal. .50		
Browning, M2, heavy barrel, flexible	187	354

	Marine	Army
Gun, submachine cal. .45		
Thompson M1 A1	99	—
Rifle, 75 mm. M20	12	39
Pistol, automatic, cal. .45		
M1911 A1	3,196	2,769

The above is taken from tables offered by Senator Douglas at Hearings before a Senate Sub-Committee on Marine Corps Strength and Joint Chiefs Representation, 13, 17, 21 April, 1951. Since they were designed to show that a Marine Division has a higher proportion of fire power than an Infantry Division they are not altogether free from ex parte coloring. E.g. Senator Douglas (p. 22) remarks, "The Marine division has . . . 98 (sic) submachine guns whereas the Army has none." In the T/O & E of a Regimental Tank Co. (Infantry Journal, June, 1950, p. 23) 31 submachine guns are listed among the regulation weapons (giving a total of 93 for the Division). It seems most unlikely that between June, 1950 and April 1951, these arms should have been withdrawn without the issue of some other equivalent protection.

Infantry companies are now to be equipped with 7 sniper's rifles per Co.

T/O & E7 (7 July, 1951) assigns 18 liaison planesper Infantry Division.

Each Division has 20 or more helicopters divided between Hq. and Divisional Artillery.

APPENDIX V

ORDER OF BATTLE, U. S. ARMY

CONTENTS

 110

APPENDIX V

ORDER OF BATTLE UNITED STATES ARMY

Zone of the Interior

First Army

Lt. Gen. Willis D. Crittenberger, CG

Hq. Governor's Island, N.Y.

9 Infantry Division (Training)

Maj. Gen. William K. Harrison

Hq. Fort Dix, N.J.

Components:

39 Inf. (from Benning between Aug.1950 and Feb.1951)

49 Inf.

60 Inf. (Dix, HT 2 July 1951)

364 Inf.

365 Inf.? (ANT 26 Aug. 1950)

26 FA Bn.

34 FA Bn.

84 FA Bn.

First Army, Non-divisional Troops.

Fort Devens, Mass.

10 FA Bn.

Camp Edwards, Mass.

56 AAA Brigade

103 AAA Brigade

245 AAA Gun Bn. (NGNY)

259 AAA Gun Bn. (NGNY)

369 AAA Gun Bn.

466 AAA Gun Bn.

633 AAA Gun Bn. (NGNY)

West Point, N.Y.

278 RCT (NG Tenn)

278 Inf.

191 FA Bn.

Fort Totten, N.Y.

80 AAA Group

526 AAA Gun Bn.

Fort Hancock, N.Y.

41 AAA Gun Bn.

Second Army

Lt. Gen. Edward H. Brooks, CG

Hq. Fort George Meade, Md.

VII Corps

Maj. Gen. Withers A. Burress

Hq. Camp Meade, Md.

5 Infantry Div. (Training)

Hq. Indiantown Gap, Pa.

Second Army

VII Corps

11

43 Inf. Div. (NG Vt., Conn., R.I.)

Maj. Gen. Kenneth F. Cramer, CG

Hq. Camp Pickett, Va.

Components:

102 Inf.

169 Inf.

172 Inf.

963 FA Bn.

143 Tank Bn.

118 Eng. Comb. Bn.

43 MP Co.

43 QM Co.

118 Med. Bn.

Alerted for movement to Europe. Will take part in exercise So. Pine at Bragg 13 Aug. - 2 Sept.

3 Armored Division (Training)

Brig. Gen. Raymond E. S. Williamson, CG

Hq. Fort Knox, Ky.

Components:

86 Heavy Tank Bn.

30 Tank Bn.

84 Tank Bn.

131 Tank Bn.

76 Armd. FA Bn.

83 Recon. Bn.

3 QM Bn.

113

Second Army

11 Airborne Division

Maj. Gen. L. L. Lemnitzer, CG

Hq. Camp Campbell, Ky.

Components:

188 Abn. Inf.

503 Abn. Inf.

511 RCT

511 Abn. Inf.

675 Abn. FA Bn.

89 Abn. FA Bn.

457 Abn. FA Bn.

544 Abn. FA Bn.

675 AAA AW Bn.

76 Hv. Tk. Bn.

141 Med. Tk. Bn.

710 Tk. Bn.

127 Abn. Eng. Combat Bn. (with 187 RCT Korea?)

406 Abn. QM Co.

511 Abn. Sig. Co.

711 Abn. Ord. Maint. Co.

11 Abn. QM Para. Maint. Co.

11 Abn. MP Co.

11 Abn. Med. Bn.

Second Army

101 Airborne Division (Training)

Maj. Gen. Ray E. Porter, CG

Hq. Camp Breckenridge, Ky.

Second Army. Non-Divisional Troops

Fort Meade, Md.

125 Inf. Reg.

3 Armd. Cav. Reg.

35 AAA Brigade

19 AAA Group

230 AAA Group

598 AAA AW Bn. (Edwards 4 Aug. 5)

459 AAA AW Bn. (Edwards 4 Aug. 5)

466 AAA AW Bn.

56 AAA Gun Bn.

70 AAA Gun Bn.

75 AAA Gun Bn.

Fort Campbell, Ky.

95 Inf. Bn. (Sep)

388 Eng. Comb. Gp.

1169 Eng. Comb. Gp.

27 Eng. Comb. Bn.

151 Eng. Comb. Bn.

Second Army. Non-Divisional Troops, (Cont.)

Fort Campbell, Ky. (Cont.)

317 Abn. Bn.

407 Eng. Comb. Bn.

1092 Eng. Comb. Bn.

1343 Eng. Comb. Bn.

Fort Meyer, Va.

3 Inf. Reg. 1 Bn.

710 AAA Gun Bn.

Fort McNiar, D.C.

3 Inf. Reg. 2 Bn.

Fort Belvoir, Va.

71 AAA Gun Bn.

Camp Pickett, Va.

351 Comm. Recon. Gp. (Scty)

501 Comm. Recon. Gp. (Scty)

33 Comm. Recon. Bn.

301 Comm. Recon. Bn.

304 Comm. Recon. Bn.

352 Comm. Recon. Bn. Scty.

Third Army

Lt. Gen. John R. Hodge, CG

Hq. Fort McPherson, Ga.

XVII Airborne Corps

Lt. Gen. John W. Leonard, CG

Hq. Fort Bragg, N.C.

82 Airborne Div.

Maj. Gen. Thomas F. Hickey, CG

Hq. Fort Bragg, N.C.

Components:

325 Abn. Inf.

504 Abn. Inf.

505 Abn. Inf.

508 Abn. Inf.

80 Inf. Bn. Attached Jan. 1951

522 Inf. Bn. Attached 2 Nov. 1950 - 7 Apr. 1951

80 Abn. FA Bn.

319 Abn. FA Bn.

376 Abn. FA Bn.

455 Abn. FA Bn.

80 Abn. AAA AW Bn.

44 Md. Tk. Bn.

714 Tk. Bn.

307 Abn. Eng. Bn.

407 Abn. QM Co.

82 Airborne Div. (Cont.)

82 Abn. Signal Co.

82 Abn. QM Para. Maint. Co.

82 Recon. Co.

782 Abn. Ord. Maint. Co.

XVII Corps

Hq. Fort Bragg, N.C.

8 Infantry Div

Maj. Gen. Harry J. Collins, CG

Hq. Fort Jackson, S.C.

Components:

13 Inf. Reg.

28 Inf. Reg.

61 Inf. Reg.

Specialists Training Reg.

28 FA Bn.

198 FA Bn.

106 Eng. Bn.? (S & S 27 May 1951)

31 Infantry Div. (NG Ala. and Miss.)

Maj. Gen. A.G. Paxton, CG

Hq. Fort Jackson, S.C.

Components:

167 Inf. Reg.

155 Inf. Reg.

[illegible] Inf. Reg.

Third Army (Cont.)

47 Infantry Div. (NG Minn. and N.D.)

Maj. Gen. Norman E. Hendrickson

Hq. Camp. Rucker, Ala.

Components:

164 Inf. Reg.

395 FA Bn.

194 Tank Bn.

199 Eng. Comb. Bn.

Third Army

Non-Divisional Troops

Fort Bragg, N.C.

25 Armd. Inf. Bn.

30 FA Bn.

83 FA Bn.

98 FA Bn.

426 FA Bn.

449 FA Obsn. Bn.

540 FA Bn.

599 FA Bn.

980 FA Bn.

37 Eng. Comb. Gp.

406 Eng. Brigade

20 Eng. Comb. Bn.

109 Eng. Comb. Bn.

 118

Third Army. Non-divisional Troops (Cont.)

Fort Benning, Ga.

30 Inf. Reg.

41 FA Bn.

201 Arm. FA Bn.

4 Eng. Comb. Bn.

68 Eng. Comb. Bn.

78 Eng. Comb. Bn.

10 Ranger Inf. Co.

12 Ranger Inf. Co.

Fort Stewart, Ga.

47 AAA Brigade

35 AAA Gun Bn.

44 AAA Gun Bn.

238 AAA Gun Bn.

250 AAA Gun Bn.

260 AAA Gun Bn.

703 AAA Gun Bn.

707 AAA Gun Bn.

713 AAA Gun Bn.

715 AAA Gun Bn.

745 AAA Gun Bn.

773 AAA Gun Bn.

Fort Homer, Fla.

116 FA Bn.

Fourth Army

Lt. Gen. Leroy Lutes, CG

Hq. Fort Sam Houston, Tex.

XV Corps

Maj. Gen. R. B. Woodruff, CG

Hq. Camp Polk, La.

1 Armored Div.

Maj. Gen. B. C. Clarke, CG

Hq. Fort Hood, Tex.

Components:

25 Armd. Inf. Bn. (at Bragg 14 July 1951)

702 Armd. Inf. Bn.

58 Armd. FA Bn.

2 AAA AW Bn. (At Bliss 16 June 1951)

16 Armd. Eng. Bn.

81 Recon. Bn.

1 QM Bn.

141 Armd. Sig. Co.

123 Armd. Ord. Maint. Co.

501 MP Co.

Provisional Ranger Co.

5 Armored Div. (Training)

Hq. Camp Chaffee, Ark.

Fourth Army. Non-divisional Troops

Fort Hood, Tex.

306 Armd. Cav. Group

Camp Polk, La.

15 Armd. Cav. Group

17 Armd. Cav. Group

30 FA Group

317 FA Bn.

593 FA Bn.

594 FA Bn.

598 FA Bn.

183 Tank Bn.

193 Tank Bn.

317 Tank Bn.

318 Hv. Tank Bn.

322 Hv. Tank Bn.

500 Tank Bn.

509 Hv. Tank Bn.

510 Hv. Tank Bn.

773 Tank Bn.

822 Tank Bn.

Fort Bliss, Tex.

39 AAA Brigade

28 AAA Gun Bn.

Fourth Army. Non-divisional Troops. (Cont.)

Fort Bliss, Tex. (Cont.)

57 AAA Gun Bn.

59 AAA Gun Bn.

420 AAA Gun Bn.

1 Guided Missile Group (under Army Field Forces 18 March 1950. Has absorbed 1 Guided Missile Rag., Sandia Base, White Sands, New Mex.)

Fifth Army

Lt. Gen. Stephen J. Chamberlain, CG

Hq. Fort Sheridan, Ill.

VI Corps

Maj. Gen. Paul W. Kendall

Hq. Camp Atterbury, Ind.

6 Armored Div. (Training)

Maj. Gen. Samuel D. Sturgis, Jr., CG

Hq. Fort Leonard Wood, Mo.

Components:

94 Inf. Bn. (Sep) ? (at Wood 7 Apr. 1951, ANJ)

76 Armd. Med. Bn.

10 Infantry Div. (Training)

Maj. Gen. James E. Moore, CG

Hq. Fort Riley, Kan.

Components:

87 Inf.

Fifth Army. (Cont.)

10 Infantry Div. (Training) (Cont.)

62 Hv. Tank Bn.

28 Inf. Div. (NG Pa.)

Maj. Gen. Daniel B. Strickler

Hq. Camp Atterbury, Ind.

Components:

109 Inf.

111 RCT

112 Inf.

107 FA Bn. (Atterbury, AIW 21 July 1951)

109 FA Bn.

228 FA Bn.

899 AAA AW Bn.

628 Tank Bn.

103 Eng. Comb. Bn.

Alerted for movement to Europe. Will take part in exercise So. Pine at Bragg 13 Aug. - 2 Sept. Hq. in Germany will be near Munich.

Non-divisional Troops

Fort Sheridan, Ill.

51 AAA Brigade

5 AAA AW Bn.

Fort Riley, Kan.

91 Armd. Cav. Recon. Bn.

Camp Lucas, Mich.

8 AAA Gun Bn.

Fort Custer, Mich.

22 AAA Group

23 AAA Group

228 AAA Group

79 AAA Gun Bn.

504 AAA Gun Bn.

30 AAA AW Bn.

Camp McCoy, Wis.

VI Corps Artillery (sic)

130 FA Group

194 FA Bn.

235 FA Obsn. Bn.

272 FA Bn.

330 FA Bn.

887 FA Bn.

101 AAA Unit (N.Y. Times July 31)

Fifth Army. Non-divisional Troops (Cont.)

Camp McCoy, Wis. (Cont.)

216 AAA Gp.

68 Eng. Comb. Group

322 Eng. Comb. Group

332 Eng. Comb. Group

31 Eng. Comb. Bn.

32 Eng. Comb. Bn.

114 Eng. Comb. Bn. (Wood 14 July 1951 ANJ)?

115 Eng. Comb. Bn.

201 Eng. Comb. Bn.

645 Eng. Comb. Bn.

Camp Carson, Colo.

14 RCT

157 RCT

11 Arm. Cav. Regt.

3 Inf. Ranger Co. (Abn.)

12 Inf. Ranger Co.

13 Inf. Ranger Co.

40 FA Group

4 FA Bn.

97 FA Bn.

537 FA Bn.

538 FA Bn.

547 Armd. FA Bn.

21 Eng. Comb. Bn.

Mountain Training Detachment

Fifth Army. Non-divisional Troops (Cont.)

Fort Sill, Okla.

43 Armd. Inf. Bn.

5 FA Group

17 FA Group

18 FA Group

1 FA Bn.

2 FA Bn. (Training)

6 Armd. FA Bn.

17 FA Bn.

18 FA Bn.

75 FA Bn.

145 FA Bn.

187 FA Obsn. Bn.

469 FA Bn.

529 Airb. FA Bn.

548 FA Bn.

553 FA Bn.

780 FA Bn.

847 FA Bn.

1 Helicopter Transportation Co.

Ft. Leonard Wood, Mo.

20 Eng. Comb. Brigade (Training)

127

Sixth Army

Lt. Gen. Joseph M. Swing, CG

Hq. San Francisco, Calif.

III Corps

Maj. Gen. W. B. Kean, CG

Hq. Fort Lewis, Wash.

6 Infantry Div. (Training)

Maj. Gen. R. B. McClure, CG

Hq. Fort Ord, Calif.

Components:

12 Inf.

450 AAA AW Bn.

7 Armored Div.

Brig. Gen. Frank H. Partridge, CG

Hq. Camp Roberts, Calif.

Non-divisional Troops

North Richland, Wash.

5 AAA Group

Fort Worden, Wash.

2 Eng. Sp. Brigade

369 Eng. Boat and Shore Reg.

Sixth Army. Non-divisional Troops (Cont.)

Fort Lewis, Wash.

36 FA Bn.

746 FA Bn.

31 AAA Brigade

250 AAA Group

7700 AAA Gun Bn.

11 AAA AW Bn.

36 Eng. Comb. Group

5 Eng. Comb. Bn.

34 Eng. Comb. Bn.

35 Eng. Comb. Bn.

40 Eng. Comb. Bn.

95 Eng. Comb. Bn.

194 Eng. Comb. Bn.

231 Eng. Comb. Bn.

1279 Eng. Comb. Bn.

Camp Roberts, Calif.

354 Eng. Comb. Group

554 Eng. Comb. Bn.

1378 Eng. Comb. Bn.

1401 Eng. Comb. Bn.

1402 Eng. Comb. Bn.

Fort MacArthur, Calif.

409 Eng. Sp. Brigade

370 Eng. Boat and Shore Reg.

Sixth Army. Non-divisional Troups (Cont.)

Camp Cooke, Calif.

281 FA Bn.

747 Amp. Tank and Trac. Bn.

Camp Irwin, Calif.

16 Armd. Cav. Group

32 Tk. Bn.

117 Truck Co. (NG Calif.)

378 Hv. Auto. Maint. Ordn. Co.

325 Tank Bn. (Tank gunnery school troops)

San Francisco, Calif.

9 AAA Gun Bn.

FAR EASTERN COMMAND

Japan

40 Inf. Div. (N.G. Calif.)

Maj. Gen. Daniel H. Hudelson, C.G.

From Camp Cooke, Calif., to Japan, April 1951

Station, Camp Sendai, Japan

Components:

160 Inf. Reg.

223 Inf. Reg. and RCT

224 Inf. Reg.

143 FA Bn.

625 FA Bn.

140 AAA AW Bn.

578 Eng. Comb. Bn.

740 Ord Maint. Co.

11 Ranger Co.

45 Inf. Div. (N.G. Okla.)

Maj. Gen. James C. Styron, CG

From Camp Polk to Japan, March 1951

Station, Camp Crawford, Hokkaido, Japan.

Components:

179 RCT

179 Inf. Reg.

158 FA Bn.

Co A 120 Eng. Comb. Bn.

131

45 Inf. Div. (N.G. Okla.) (Cont.)

180 RCT

180 Inf. Reg.

171 FA Bn.

Co B 120 Eng. Comb. Bn.

279 RCT

279 Inf. Reg.

160 FA Bn.

Co C 120 Eng. Comb. Bn.

169 FA Bn.

145 AAA AW Bn.

245 Tank Bn.

45 Sig. Co.

10 Ranger Co.

187 Reg. Comb. Team

Brig. Gen. Frank S. Brown, Jr., Com.

Originally part of 11 Airborne Div. In Korea since Sept. 1950

On maneuvres in Japan, 22 August 1951

Components:

187 Airb. Inf. Reg.

88 Airb. AAA AW Bn.

2348 QM Aerial Supply Co.

Korea

132

1. Cav. Div.

Brig. Gen. Thomas L. Harrold, CG

In Japan at outbreak of hostilities. In Korea ever since.

Station, Western Front, I Corps. APO 201 SF

Components:

5 Cav. Reg.

7 Cav. Reg.

8 Cav. Reg.

61 FA Bn.

79 FA Bn.

82 FA Bn.

99 FA Bn.

92 AAA AW Bn.

70 Hv. Tank Bn.

6 Med. Tank Bn.

8 Eng. Comb. Bn.

16 Recon Co.

545 MP Co.

Attached:

21 Thailand Inf. Reg. attached to 8 Cav. Reg.

Greek Bn., attached to 7 Cav. Reg.

Maj. Gen. Gerald C. Thomas, CG

In California at outbreak of hostilities. In Korea since July 1950.

Station, Central Front.

Components:

1 Reg.

5 Reg.

7 Reg.

11 Reg.

11 Tank Bn.

50 AAA AW Bn. (SP) (AAJ Apr. - May)

2 Inf. Div.

Maj. Gen. Clarkson Ruffner, CG

At Lewis at outbreak of hostilities. In Korea since Aug. 1950.

Station, East Central Front, X Corps. APO 248 SF.

Components:

9 RCT

23 RCT

23 Inf. Reg.

37 FA Bn.

38 Inf. Reg.

38 FA Bn.

82 AAA AW Bn. (Sp)

72 Hv. Tank Bn.

2 Eng. Comb. Bn.

1 Raider Co.

Attached:

French Bn.

Dutch Bn.

Maj. Gen. Robert H. Soule, CG

At Benning at outbreak of hostilities. In Korea since Nov. 1950.

Station, East Central Front, X Corps. APO 480 SF.

Components:

7 Inf. Reg. (Devens)

15 Inf. Reg.

65 RCT (Puerto Rico)

9 FA Bn. (155 mm.)

999 FA Bn.

3 AAA AW Bn. (Sp.) APO 468

64 Hv. Tank Bn. APO 468

10 Eng. Comb. Bn.

3 Recon. Co.

Attached:

Belgian Bn.

7 Inf. Div.

Maj. Gen. C. B. Ferenbaugh, CG

In Japan at outbreak of hostilities. In Korea ever since.

Station, Central Front. APO 7 SF.

Components:

17 Inf. Reg.

31 Inf. Reg.

32 Inf. Reg.

31 FA Bn.

48 FA Bn.

49 FA Bn.

57 FA Bn.

7 Inf. Div. (Cont.)

15 AAA AW Bn (Sp)

50 AAA AW Bn (Sp) (?) (AAJ May - June)

13 Eng. Comb. Bn.

7 MP Co.

24 Inf. Div.

Maj. Gen. Blackshear M. Bryan, CG

In Japan at outbreak of hostilities. In Korea ever since.

Station, Central Front, IX Corps. APO 24 SF.

Components:

5 RCT (from Schofield Barracks TH)

5 Inf. Reg.

555 FA Bn.

19 Inf. Reg.

21 Inf. Reg. and RCT

11 FA Bn.

52 FA Bn.

64 FA Bn.

Battery A, 21 AAA AW Bn. (Sp)

26 AAA AW Bn. (Sp)

52 AAA AW Bn. (Sp)

3 Eng. Comb. Bn.

24 Signal Co.

136

25 Inf. Div.

Maj. Gen. Ira P. Swift, CG

In Japan at outbreak of hostilities. In Korea ever since.

Station, Western Front, I Corps. APO 25 SF.

Components:

24 Inf. Reg. (Negro regiment, to be disbanded)

27 Inf. Reg. and RCT

35 Inf. Reg. and RCT

64 FA Bn.

90 FA Bn.?

159 FA Bn.

21 AAA AW Bn. (Sp.), except battery A

Battery A, 25 AAA AW Bn. (Sp) attached Jan.-Feb. 1951

79 Hv. Tank Bn.

89 Med. Tank. Bn.

65 Eng. Comb. Bn.

77 Eng. Comb. Bn.

25 Recon. Co.

5 Airborne Ranger Co.

Far Eastern Command

Non-divisional Troops

Korea

I Corps

176 Armd. FA Bn.

10 AAA Gp.

68 AAA Gun Bn.

865 AAA AW Bn., Btry D

933 AAA AW Bn., Btry A.

78 AAA Gun Bn.

50 AAA AW Bn.

76 AAA AW Bn.

73 Hv. Tank Bn.

IX Corps

378 Eng. Comb. Bn.

X Corps

116 Eng. Comb. Bn.

Without Corps Assignment

8 Ranger Co.

10 FA Bn. (Battery A 1 Apr. 1951)

196 FA Bn. (NG Tenn.)

936 FA Bn. (NG Tenn.)

937 FA Bn. (Sp. 155 mm. NG Okla.)

31 Tk. Bn.

19 Eng. Comb. Gp.

1169 Eng. Comb. Bn.

14 Eng. Comb. Bn.

2 Eng. Sp. Brigade (with 7 Div. at Inchon ANW 23 Dec. 1950)

Japan

34 RCT

187 RCT

11 FA Bn. (assigned to 24 Div.?)

63 FA Bn.

40 AAA Brigade

97 AAA Gun Bn.

138 AAA Gp.

37 AAA Gun Bn.

753 AAA Gun Bn.

37 AAA AW Bn.

507 AAA AW Bn. (assigned to 10 AAA Gp.?)

865 AAA AW Bn. (assigned to 10 AAA Gp.?)

56 Amph. Tk. and Trac. Bn.

Okinawa

29 RCT

65 AAA Gun Bn.

22 AAA AW Bn.

509 Eng. Comb. Bn.

OFFENSIVE WEAPONS

STRENGTH OF U.S. GROUND FORCES, FECOM

WEAPONS	8 ARMY DIVS.[2]	3 RCT's[3]	1 MARINE DIV.[4]	TOTALS
Small calibre offensive weapons[1]	62,144	6,198	10,280	78,622
Mortars (60 & 81 mms. - 4.2")	1,280	153	159	1,592
Recoilless rifles (57 & 75 mms.)	960	117	12	1,089
Tanks (incl. M-45 assault guns)	1,192	66	94	1,352
Artillery pieces (105 & 155 mm. howitzers)	516	54	72	702
Flame Throwers			111	111
M-16 (SP AA Weapon)	256			256
M-19 (SP AA Weapon)	256			256

1. Rifles, calibre .30 machine guns, BAR's (Carbines, pistols and submachine guns have been omitted as chiefly defensive.)
2. Using T/O & E 7N, 7 July 1948 as the basis for calculation.
3. Composition taken to be one Infantry Regiment plus one FA Battalion.
4. Using the figures offered by Senator Douglas at hearing before a Senate Sub-Committee on Marine Corps Strength and JCS representation, 13, 17, 21 April, 1951.

140

American Ground Forces in Europe

United States Forces in Germany

U.S. Constabulary

1st Constabulary Brigade

Hq.:

CG : Brig. Gen. George W. Read, Jr.

2nd Constabulary Brigade

Hq.: Munich, Germany (The Munich Area)

CG : Brig Gen. George W. Smythe

2 Arm. Cav. Regt.	Augsburg
6 Arm. Cav. Regt.	Straubing
14 Arm. Cav. Regt.	Friedberg
15 Constabulary Sq.	Wieden
16 Constabulary Sq.	
24 Constabulary Sq.	Schweinfurt
25 Constabulary Sq.	

370 Inf. Bn.	Regensberg
371 Inf. Bn.	Kitzingen
373 Inf. Bn.	
70 FA Bn. (?)	Fuessen
517 FA Bn.	Giessen
519 FA Bn.	Dieburg

American Ground Forces in Europe (Cont.)

1st Infantry Division

CG : Brig. Gen. Thomas S. Timberman

Ass't CG: Brig. Gen. Samuel G. Conley

Hq.: Darmstadt

On occupation duty in Germany since 1945

16 Inf. Regt.	Nürnberg
18 Inf. Regt.	Aschaffenberg
26 Inf. Regt.	Bamberg
63 Tank Bn.	Heidelberg
5 FA Bn.	Kitzingen
7 FA Bn.	
32 FA Bn.	Aschaffenberg
33 FA Bn.	
15 FA Bn., Btry D (?) (7 July 1951)	
1 Eng. Comb. Bn.	Darmstadt
1 Sig. Co.	
1 QM Co.	
1 C.I.C. Det.	

Attached: 379 Inf. Bn. (30 September 1950)

American Ground Forces in Europe (Cont.)

4th Infantry Division

CG : Maj. Gen. Harlan N. Hartness

Hq.: Frankfurt (Mannheim?)

Division activated at Fort Benning, Ga., in October 1950.

80% of its men were drafted between July and November.

First contingent landed at Bremerhaven in June 1951.

8 Inf. Regt.

22 Inf. Regt.

40 Hv. Tank Bn.

20 FA Bn.

29 FA Bn.

42 FA Bn.

44 FA Bn.

46 AAA AW Bn. (SP)

4 Eng. Comb. Bn.

704 Ord. Maint. Co.

 143

2nd Armored Division

CG : Maj. Gen. Williston B. Palmer

Hq.: Baumholder, Germany (Temporary)

Division stationed at Fort Hook, Texas, 1950-1951.

Sailed for Germany, June, 1951, arrived July, 1951.

12 Arm. Inf. Bn.

41 Arm. Inf. Bn.

42 Arm. Inf. Bn.

1 Med Tank Bn.

29 Hv. Tank Bn.

57 Med. Tank Bn.

66 Med. Tank Bn. (?)

67 Med. Tank Bn.

3 Arm. FA Bn.

14 Arm. FA Bn.

16 Arm. FA Bn.

58 Arm. FA Bn.

597 Arm. FA Bn.

82 Recon. Bn.

17 Arm. Eng. Bn.

48 Arm. Med. Bn.

124 Ord Bn.

142 Arm. Sig. Co.

2 QM Bn.

American Ground Forces in Europe (Cont.)

United States Forces in Austria (USFA)

Hq : Salzburg, Austria

CG : Lt. Gen. S. LeRoy Irwin

USFA Tactical Command, CG: Brig. Gen. James C. Fry

350 Inf. Regt.	Salzburg
4 Recon. Bn.	Horsching
77 FA Bn.	
510 FA Bn.	Linz
70 Eng. Combat Bn.	
791 MP Bn.	
796 MP Svc. Bn.	Vienna
63 Sig. Operations Bn.	Salzburg
63 Sig. Co.	Salzburg
516 Sig. Co.	Salzburg

Trieste United States Troops (TRUST)

Hq.: Trieste

CG : Maj. Gen. Edmund B. Sebree

351 Inf. Regt.

88 Recon. Bn.

7100 AU AMG Det.

Miscellaneous Units, Europe

6 Inf. Regt.	Berlin
557 Inf. Platoon (EUCOM Honor Guard)	Heidelberg
7732 FA Gp.	Sonthofen, Germany
7 FA Bn.	Schwabach
74 FA Bn.	Germany
12 AAA Gp.	Karlsruhe
16 AAA Gp.	United Kingdom
32 AAA Brigade	Mildenhall, U.K.
34 AAA Brigade	Heidelberg
39 AAA Gun Bn.	Germany
552 AAA Gun Bn.	Germany
4 AAA AW Bn.	United Kingdom
39 AAA AW Bn.	U.K.
48 AAA AW Bn. (SP)	Karlsruhe
60 AAA AW Bn.	U.K.
62 AAA AW Bn.	Ludwigsburg, Germany
73 AAA AW Bn. (SP)	Germany
443 AAA AW Bn.	Germany
18 Eng. Comb. Bn.	Wetzlar, Germany
54 Eng. Comb. Bn	Germany
485 Eng. Comb. Bn.	
547 Eng. Comb. Bn.	Germany

Military Posts and Subposts, Europe

Augsburg Military Post

Subposts: Fuessen, Furstenfeldbruck AB, Kaufbeuren, Landsberg AB, Sonthofen.

CO: Col. James J. Pirtle

Units:

2 Arm. Cav. Regt.
7732 FA Gp.
70 FA Bn.
539 General Dispensary
66 CIC Det.
7736 Audit Agency
53 Labor Supervision Co.
7815 SCU
MP Customs Unit
504 Labor Supervision Co.
540 Dispensary
22 Ord. MAM Co.
18 Eng. Const. Bn.
15 MP CID
Region XII, 66 CIC Det.

Berlin Military Post

CO: Col. Maurice W. Daniel

Commandant U.S. Forces, Berlin, Maj. Gen. Lemuel Mathewson

Units:

6 Inf. Regt.
759 MP Bn.

Berlin Military Post (Cont.)

147

298 Army Band

7780 Hq Bn.

Bremerhaven Port of Embarkation

CG: Brig. Gen. Charles D. W. Canham

APO 69, New York

Units:

382 MP Sv. Bn.

98 Transportation Port Co.

17 Transportation Major Port Co.

15 Port Bn.

7775 Sig. Svc. Co.

Frankfurt Military Post

Subposts: Bad Nauheim, Darmstadt, Hanau, Rhine-Maine AB, Kassel, Hersfeld, Fulda, Giessen.

CO: Brig. Gen. Basil H. Perry

Units:

V Corps

1 Inf. Div.

4 Inf. Div.

14 Arm. Cav. Regt.

517 FA Bn.

519 FA Bn.

1 Eng. Comb. Bn.

18 Eng. Comb. Bn.

Frankfurt Military Post (Cont.)

529 MP. Svc. Co.

709 MP. Svc. Bn.

179 Sig. Dep. Gp.

52 MP CID

7772 Sig. Svc. Co.

7811 SCU Prov. Trng. Co.

Hanau Engineer Depot (599 Eng. Base Dep.?)

Region III, 66 CIC Det.

Garmisch Military Post

Intelligence and MP School, EUCOM

Engineer School, EUCOM

Heidelberg Military Post

Subposts: Karlsruhe, Mannheim

CO: Col. P. J. Lloyd

Units:

EUCOM

63 Tank Bn.

34 AAA Brigade

12 AAA Gp.

48 AAA AW Bn. (SP)

28 TT Bn.

557 Inf. Rifle Plat.

17 Sig. Opn. Bn.

77 Eng. Const.

149

Heidelberg Military Post (Cont.)

7809 SCU

7888 Sp. Tps. (WAC)

7774 Sig. Bn.

7709 Eng. Bn.

481 MP CID

511 MP Svc Plat.

527 MP Svc. Co.

533 MP Svc. Co.

7820 Mil. Prison Guard Co.

33 Army Band

437 Army Band

Mannheim Staging Area

Linz Military Post

CO:

Units:

510 FA Bn.

Munich Military Post

Subposts: Bad Tolz, Berchtesgaden, Dachau, Deggendorf, Erding AB, Landshut, Munich-Riem AB, Murnau, Regensberg, Streubing Neubiberg AB.

CO: Col. Stanley J. Brogen

Units:

2 Constabulary Brigade

6 Arm. Cav. Regt.

370 Inf. Bn.

Munich Military Post (Cont.)

116 Sig. Svc. Bn.

Munich QM Depot

Region IV, 66 CIC Det.

Region V, 66 CIC Det.

Nürnberg Military Post

Subposts: Bamberg, APO 139, New York, Ansbach, Bayreuth, Erlangen, Grafenwohr, Schwabach.

CO: Brig. Gen. Ernest A. Bixby

APO 696, New York

Units:

16 Inf. Regt.

26 Inf. Regt.

7 FA Bn.

556 Ord. MM Co.

15 Constabulary Sq.

7810 Sta. Complement Unit

7777 Sig. Svc. Co.

512 MP Svc. Plat.

793 MP Svc. Bn.

27 Base P.O.

71 Ord. Bn.

15 Evac. Hosp.

626 QM Refrig. Co.

84 QM Depot Co.

17 Sp. Svc. Co.

151

Nurnberg Military Post (Cont.)

24 Trans. Trk. Co.

7747 MP Railway Security Gp., Det. B

32 Army Band

EUCOM Exchange System Gp.

427 CIC Det.

Rhine Military Post (Cont.)

Created 28 March 1951

CO: Col. Oliver W. Hughes

Units: 2 Arm. Division (?)

Salzburg Military Post

CO:

Units:

Usfa

350 Inf. Regt.

63 Sig. Operations Bn.

63 Sig. Co.

516 Sig. Co.

Stuttgart Military Post

Subposts: Stuttgart Municipal Subpost, Bad Mergentheim

CO:

Units:

Seventh Army

62 AAA AW Bn.

Nuernberg Military Post (Cont.)

152

539 MP SUC Co.

97 Sig. Opn. Bn.

66 CIC Det.

Vienna Military Post

CO: Brig. Gen. William T. Fitts, Jr.

Units:

796 MP Svc. Bn.

Wiesbaden Military Post

Subposts: Wiesbaden AB

CO: Brig Gen. Fay R. Upthegrove

Units:

7111 Mtr. Veh. Sq.

7112 Supply Sq.

459 Med. Gp.

517 AP Sq.

Wurzburg Military Post

Subposts: Kitzingen, Aschaffenburg, Bad Kissingen, Hammelberg, Schweinfurt, Wildflechen, Wurzburg Municipal Subpost.

CO: Brig. Gen. Theodore L. Futch

Units:

24 Constabulary Sq.

371 Inf. Bn.

18 Inf. Regt.

5 FA Bn.

Wurzburg Military Post (Cont.)

32 FA Bn.

537 MP Co.

Region XI, 66 CIC Det.

154

OFFENSIVE WEAPONS

STRENGTH OF U.S. GROUND FORCES, EUROPE

WEAPON	2 INF. DIVS.[1]	1 ARM.DIV.[2]	CONSTABULARY[3]	MISC. UNITS[4]	TOTALS
Small calibre offensive weapons[5]	15,536	3,840[6]	5,607	7,868	32,851
Mortars (60 & 81 mms. - 4.2")	320	83	132	188	723
Recoilless rifles (57 & 75 mms)	240		39	126	405
Tanks (incl. M-45 assault guns)	298	361	445	165	1,269
Artillery pieces (105 & 155 mm. howitzers)	144	72	54	72	342
M-16 (SP AA Weapon)	64	32		128	224
M-19 (SP AA Weapon)	64	32		128	224
Flame Throwers					

1. Using T/o & E 7N, 7 July 1948 as the basis for calculation.
2. T/O & E 17N, 8 October 1948.
3. 3 Cav. Regts., 3 Inf. Bns. and 3 FA Bns. only (Constabulary Sqs. omitted).
4. USFA, TRUST and Germany (3 Inf. Regts., 1 Inf. Bn., 2 Recon. Bns., 4 FA Bns. & 4 AAA AW Bns.)
5. Rifles, calibre .30 machine guns, BAR's (carbines, pistols & submachine guns omitted).
6. Excluding weapons on combat vehicles.

Other Overseas Commands

Iceland Defense Force

CG: Brig. Gen. E. J. McGaw

C/S: Col. Aubrey S. Newman

Air Base Commander and Air Force Deputy: Col. Andrew D. Moore, USAF

Alaskan Command (U.S. Army, Alaska)

CG: Lt. Gen. William E. Kepner

Hq: Fort Richardson, Alaska, APO 942, Seattle

4 Inf. Regt. 3 Bn.	Ladd AFB
196 RCT	Anchorage
867 AAA AW Bn. (SP)	Ladd AFB
571 Comp. Svc. Co.	Ladd AFB
500 QM Svc. Co.	Fort Richardson

Caribbean Command (U.S. Army, Caribbean?)

CG: Lt. Gen. William H. H. Morris

Hq.: Quarry Heights, Canal Zone. APO 834, New Orleans.

33 Inf. Regt.	Howard Field, Fort Cobb, C.Z.
45 Mechanized Cavalry (Sq.?)	C.Z.

156

Caribbean Command (U.S. Army, Caribbean?) (Cont.)

764 AAA Gun Bn. Fort William D. Davis, C.Z.

50 MP CID

Pacific Command (U.S. Army, Pacific)

CG:

Deputy CG: Maj. Gen. Percy W. Clarkson

Hq.: Fort Shafters, Oahu, T.H. APO 958

7 Eng. Brigade Eniwetok Is.

79 Eng. Construction Bn.

Hawaiian Signal Operations Gp. Fort Shafter, T.H.

Task Force 3 Hickam AFB, T.H.

APPENDIX VI

SEE TABLE - APPENDIX VI

APPENDIX VII

SEE TABLE - APPENDIX VII

APPENDIX VIII

158

APOs

Number	Units	Location
APO 1, New York	1 Inf. Division	Darmstadt
	Attached Units	
APO 3, San Francisco		FECOM
APO 5, " "	8018 AU Cp. Maugan, Comp. Svc. Co.	
APO 6, " "		Pusan, Korea (Feb., 1950)
APO 7, " "	7 Inf. Division	Korea
	Attached Units	
APO 9, " "	25 Sta. Hosp.	
	22 MP CID	
APO 15, " "	Hq. Cp. Osaka Sp. S. Sec.	Japan
	Hq. Southwestern Command	"
APO 24, " "	24 Inf. Division	Korea
	Attached Units	
APO 25, " "	25 Inf. Division	"
	Attached Units	
APO 27, " "	Hq. Repl. Bn., 8068 AU	FECOM
APO 32, " "	Hq. Cp. Chichamauga	
APO 43, " "		
APO 46, New York	Hq., Seventh Army	Heidelberg
	Hq., 7827 M.I. Co.	
APO 58, " "	9042 AAU, Paris Finance Office	Paris
	7965 Area Comm.	
	Sp. S. European Comm. Exchange System	
	7966 EUCOM Det., JA Sec.	

159

Number	Units	Location
APO 59, San Francisco	Hq., Eighth Army	
	167 Trans. Trk. Bn.	
	21 MP CID	
	304 Sig. Opns. Bn.	
	2 Logistical Comm.	
	704 CIC Det., 2 Log. Comm.	
	7 Trans. Medium Port.	
APO 61, New York		Landsberg, Germany
APO 62, " "	14 Arm. Cav. Regt.	Friedberg, "
	37 Trans. Hwy. Trans. Div.	Gad Kissingen,"
APO 66, " "	8606 AAU Herzo Base	Erlangen, "
	7810 Sta. Complement Unit	Erlangen, "
APO 69 " "	7749 Staging Area	Bremerhaven, "
	7749 Det. Trans. Det.	" "
	7775 Sig. Svc. Co.	" "
APO 74, San Francisco		Clark Field, Luzon
APO 75, " "	507 AAA AW Bn.	FECOM
	865 AAA AW Bn.	FECOM
APO 82, New York	26 Base P.O.	Frankfurt, Germany
APO 86, San Francisco		Iwo Jima (1950)
APO 134, New York	32 FA Bn.	Aschaffenburg
APO 139, " "	26 Inf. Regt.	Bamberg, Germany
	427 CIC Det., Team 11	" "
APO 154, " "	97 Sig. Opn. Bn.	Stuttgart, "
	7746 Comm. Intel. Svc.	" "
	66 CIC Det., Hq.	" "

Number	Units	Location
APO 162, New York	7731 Sp. Svc. Dep. Co.	Aschaffenburg, Germany
APO 168, " "	USFA, Hq.	Salzburg, Austria
APO 169, " "		Wetzlar, Germany
APO 171, " "	24 Constab. Sq.	Schweinfurt, Germany
		(Fritzlar? ")
	66 CIC Det., Region X	
APO 172, " "	EUCOM Intel. and MP School	Garmisch, Germany
	EUCOM Engineer School	" "
APO 174, " "	4 Recon. Bn.	Horsching, Austria
	67 MP Co.	" "
	77 FA Bn.	" "
	488 Col. and Gen. Supplies Dep.	" "
APO 175, " "		Darmstadt, Germany
APO 178, " "	2 Arm. Cav. Regt.	Augsburg, "
	18 Eng. Const. Bn.	" "
	15 MP CID	" "
	66 CIC Det., Region XII	" "
APO 178A, " "	18 Eng. Comb. Bn.	Giessen, "
APO 182, San Francisco		Guam (1950)
APO 184, " "		" "
APO 187, " "	516 MP Svc. Co.	
	7126 AU	
	7128 AU	
	7130 AU, Hq. Sp. Svc. Det.	
	506 CIC Det.	
APO 201, " "	1 Cav. Division	Korea
	Attached Units	

161

Number	Units	Location
APO 205, New York	U.S. Military Mission	Iran
APO 206, " "	Joint U.S. Military Aid Group	Greece
APO 206A, " "	U.S. Aid Group	Turkey
APO 207, " "		Erding, Germany
APO 208, " "		Furstenfeldbruck, Germany
APO 209, " "	TRUST	Trieste
	281 MP Svc. Co.	"
APO 225, " "	370 Inf. Bn.	Regensberg, Germany
	66 CIC Det. Region V	" "
APO 226, San Francisco		Haneda Field, Honshu
APO 239, " "		Okinawa
APO 244, " "		Saipan
APO 246, " "	Marianas-Bonins Command	
APO 248, " "	2 Inf. Division	Korea
	23 Inf. Regt.	"
APO 249, " "		Guam
APO 264, " "	IX Corps, Hq.	Korea
APO 301, " "	14 Eng. Combat Bn.	FECOM
	726 Trans. Trk. Co.	"
	60 Sig. Svc. Co.	"
	532 Sig. Const. Co.	"
	8202 AU US Mil. Adv. Gp. to Republic of Korea	"
	167 Trans. Trk. Bn.	"
	185 Eng. Const. Bn.	"
	51 MP CID	"

Numbers	Units	Locations
APO 301, San Francisco (cont.)	3 MP CID	FECOM
	4 Sig. Bn.	"
	442 CIC Det., GHQ, FEC	"
	89 Med. Tnk. Bn.	"
	20 MP CID	"
	60 Ord. Gp.	"
APO 305, New York	6 Arm. Cav. Regt.	Straubing, Germany
APO 317, San Francisco	51 Sig. Svc. Det.	
APO 317, " "	209 MP Co.	Japan
APO 323, " "		"
APO 328, " "		"
APO 331, " "	8111 AU Sig. Svc.	Okinawa
	40 MP Bn.	"
APO 334, " "		Guam
APO 343, " "	Japan Logistical Comm., Hq.	Yokohama, Japan
APO 349, " "		Bremerhaven, Germany
APO 354, " "		FECOM
APO 358, " "	I Corps, Hq.	Korea
APO 403, New York	EUCOM Hq.	Heidelberg, Germany
	48 AAA AW Bn. (SP)	" "
	77 Eng. Const. Bn.	" "
	17 Sig. Opn. Bn.	" "
	7744 Educ. Trng. Unit	" "
APO 403A, " "	481 MP CID	Mannheim "
APO 404, San Francisco	Korean Mil. Adv. Gp.	Korea
APO 407, New York	2 Const. Brig.	Pasing, Germany
	116 Sig. Svc. Co.	" "

163

Number	Units	Location
APO 407A, New York	66 CIC Det., Region IV	Munich, Germany
APO 408, San Francisco	3 Inf. Division	Korea
	7 Inf. Regt.	"
APO 455, " "		Sand Island, Oahu
APO 459, " "		Ft. Shafter, "
APO 468, " "	16 Inf. Regt.	Korea
	3 AAA AW Bn. (SP)	"
	64 Hv. Tank Bn.	"
APO 500, " "	FECOM, GHQ	Tokyo, Japan
	ASA PAC Hq.	" "
	441 CIC Det.	" "
	406 Med. Gen. Lab.	" "
APO 503, " "	2 Trans. Major Prt.	Yokohama "
	13 QM Bn.	" "
	44 MP CID	" "
	Yokohama Eng. Depot	" "
	Japan Logistical Comm.	" "
APO 541, " "	CIC, USFA, Hq.	Salzburg, Austria
	350 Inf. Regt.	" "
	63 Sig. Bn.	" "
APO 547, " "	8012 Comp. Svc. Co.	Japan
	8017 Comp. Svc. Co.	"
APO 600, " "	772 MP Bn.	
	308 Mil. Govt. Gp.	
APO 612, " "		"
APO 613, " "		"

164

Number	Units	Location
APO 633, New York		Wiesbaden, Germany
APO 660, San Francisco	70 Hv. Tank Bn.	FECOM
	247 Ord. Sup. Det. Co.	
	323 Eng. L. E. Co.	
APO 676, New York	9041 AAU	Rio de Janeiro, Brazil
APO 677, " "		Goose Bay, Labrador
APO 696, " "	24 Trans. Trk. Co.	Furth, Germany
APO 696A, " "	7738 EUCOM Exchange System Gp.	Nuremberg, Germany
APO 703, San Francisco		Japan
APO 707, " "		Manila, P. I.
APO 710, " "		Japan
APO 713, " "		"
APO 714, " "		Philippine Islands
APO 719, " "	9 Ord. MAM Co.	
APO 726, Seattle		Attu Is., Alaska
APO 729, "		Shemua Is., "
APO 731, "	867 AAA AW Bn.	Ladd AFB., "
	571 Comp. Svc. Co.	" " "
APO 733, "		Big Delta, "
APO 736, San Francisco		Manila, P. I.
APO 742, New York	6 Inf. Regt.	Berlin, Germany
	7781 SCU	" "
APO 743, " "		Wurzburg, "
APO 751, " "		Bremen, "
APO 757, " "	709 MP Svc. Bn.	Frankfurt,"
	779 Sig. Dep. Gp.	" "

Number	Units	Location
APO 757, New York (cont.)	7811 SCU	Frankfurt, Germany
	52 MP CID	" "
	599 Eng. Base Depot	" "
	66 CIC Det., Region III	" "
	8620 Sig. CU	" "
APO 777, " "	796 MP Svc. Bn.	Vienna, Austria
	7669 MIS Det., Sub. Det. "C"	" "
APO 777A, " "		Salzburg, Austria
APO 800, " "	66 CIC Det., Reg. XI	Wurzburg, Germany
APO 807, " "	14 Arm. Cav. Regt.	Bad Nauheim, Germany
	528 MP Svc. Co.	" " "
APO 827, New Orleans	U.S. Army, Caribbean, Pacific Sector	Ft. Clayton, C.Z.
	QMC, Pacific Sector	" " "
APO 828, " "		Corozal, "
APO 829	764 AAA Gun Bn.	Ft. Wm. D. Davis, C.Z.
APO 830, " "		Ft. Dehesseps, "
APO 831, " "		France Field, "
APO 832, " "	33 Inf. Regt.	Ft. Kobbe, "
APO 834, " "	U.S. Army Caribbean, Hq.	Quarry Heights, "
	50 MP CID	" " "
APO 835, " "		Randolph Field, "
APO 836, " "		Ft. Sherman, "
APO 837, " "		Ft. Gulick, "
APO 838, " "		Rio Hata, Panama
APO 843, New York	USA Radio Station, Hq.	
APO 845, " "		Borinquen Field, P.R.
APO 846, " "		Ft. Buchanan, "

 66

Number	Units	Location
APO 847, New York		Henry Barracks, P.R.
APO 848, " "		Losey, "
APO 851, " "		Ft. Brook "
APO 851A, " "	Buchanan Gen. Depot	"
APO 854, " "		Ft. Bundy, "
APO 855, " "		Coolidge Field, Antigua, BWI
APO 856, " "		Ft. Ball, Bermuda
APO 857, " "		Atkinson Field, Br. Guiana
APO 858, " "	Greenland Base Command	Narsarssuak, Greenland
APO 859, " "		Sonchestromfjord, "
APO 861, " "		Ft. Simonds, Jamaica, BWI
APO 862, " "	Pepperell AFB	St. Johns, Newfoundland
APO 863, " "	McAndrew AFB	Argentia, "
APO 864, " "	Harmon Field	Stephenville, "
APO 867, " "	Beane Field	St. Lucia, BWI
APO 869, " "	Ft. Read	Trinidad, BWI
APO 872, " "		Marburg, Germany
APO 897, New Orleans		San Jose Is., Panama
APO 900, San Francisco		Manila, Luzon
APO 902, " "		Japan
APO 909, " "	X Corps, Hq.	Korea
APO 919, " "	753 AAA Gun Bn.	Japan
APO 925, " "		Tokyo, Japan
APO 929 " "		Japan
APO 932, Seattle		Nome, Alaska
APO 939, "	Ft. Mears	Dutch Harbor, Alaska
APO 942, "	[illegible]	[illegible]on, "

Number	Units	Location
APO 942, Seattle (cont.)	500 QM Svc. Co.	Ft. Richardson, Alaska
APO 944, "	Ft. Randall	Cold Bay, Alaska
APO 948, "	Ft. Glenn	Umnak Is., "
APO 949, "	5005 Hosp. Gp.	Whitehorse, Yukon, Canada
APO 951, "	Bellows Field	Oahu, T. H.
APO 953, "	Hickam Field	" "
	Pacific Air Command	" "
APO 954, "	Ft. Kamahameha	" "
APO 956, "	Ft. Ruger	" "
APO 957, San Francisco	Schofield Barracks	" "
	8065 AAU	" "
	10 Bn. Hawaiian Inf. T.C.	" "
APO 958, " "	U.S. Army, Pacific Hq.	Ft. Shafter, Oahu, T.H.
APO 960, " "		Hilo, Hawaii, T.H.
APO 961, " "		Kahului, Main, "
APO 963, " "		Hanapepe, Kanai,"
APO 970, " "		Japan
APO 973, " "	3 Logistical Comm.	FECOM
	14 Trans. Port. Bn.	"
APO 980, Seattle		Adak Is., Alaska
APO 986, "		Amchitka Is., "
APO 987, "		Whittier, "
APO 994, San Francisco	64 AAA AW Bn.	Japan
	138 AAA Gp.	"
APO 1005, " "		"
APO 1007, " "		"
APO 1009, " "		Korea

168

Number	Units	Location
APO 1051, San Francisco	Tokyo QM Depot	Tokyo, Japan
APO 1052, " "		" "
APO 1054, " "		FECOM
APO 1055, " "		Tokyo, Japan
APO 1105, " "		Japan

SECTION III

THE NAVY

III. THE U. S. NAVY

Scope of this Report

According to the directive under which this report was written, the investigators were confined to a study of the major combatant units in the U. S. Fleet. Consequently it contains no information regarding minesweepers, patrol vessels, amphibious craft, and auxiliaries; transport or training aircraft; training; or the organization and operation of the Naval and Marine Corps Reserve.

171

I. ORGANIZATION

A. Department of the Navy (1)

Secretary of the Navy		Dan A. Kimball
Under Secretary of the Navy		F. P. Whitehair
Assistant Secretary of the Navy		John T. Koehler
Assistant Secretary of the Navy for Air		John F. Floberg
Chief of Naval Operations	Adm.	W. M. Fechteler
Vice Chief of Naval Operations	Adm.	D. P. Duncan
Naval Inspector General		Rear Adm. H. S. Kendall
Deputy Chief of Naval Operations (Personnel)		Vice Adm. L. T. DuBose
Deputy Chief of Naval Operations (Administration)		Rear Adm. C. C. Hartman
Deputy Chief of Naval Operations (Operations)		
Deputy Chief of Naval Operations (Logistics)		Vice Adm. F. S. Low
Deputy Chief of Naval Operations (Air)		Vice Adm. J. H. Cassady
Chief, Bureau of Aeronautics		Rear Adm. Thomas S. Combs
Chief, Bureau of Medicine and Surgery, and Surgeon General		Rear Adm. H. L. Pugh, MC
Chief of Naval Personnel		Vice Adm. J. W. Roper
Chief, Bureau of Ordnance		Rear Adm. M. F. Schoeffel
Chief, Bureau of Ships		Rear Adm. David H. Clark
Chief, Bureau of Supplies and Accounts		Rear Adm. C. W. Fox
Chief, Bureau of Yards and Docks		Rear Adm. J. F. Jelley
Judge Advocate General of the Navy		Rear Adm. G. L. Russell
Commandant of the Marine Corps		Gen. Clifton B. Cates, USMC

(1) See Navy Chart I.

172

B. Atlantic Fleet

Cin C Lant	Vice Adm. L. D. McCormick
Chief of Staff	Rear Adm. W. G. Switzer
Com Air Lant	Vice Adm. J. B. Ballentine
Com Bat Lant	
Com Cru Lant	Rear Adm. J. L. Hollaway
Com Dir Lant	Rear Adm. F. G. Fabian
Com Sub Lant	Rear Adm. S. S. Murray
Com Mine For Lant	
Com Serv Lant	
Com Tra Lant	
Com Phib Lant	Vice Adm. R. P. Briscoe
Phib Tra Com	Rear Adm. A. J. Wellings
Com Lant Res Flt	
Com Gen FMF	Maj. Gen. G. B. Erskine
Com Air FMF	Maj. Gen. T. J. Cushman
Com Eas Sea Fron	Vice Adm. O. C. Badger
Com Lant Sea Fron	
Com Second Fleet	
Com Fourth Fleet	
Com Eighth Fleet	
Com Nav For Germany	Rear Adm. C. F. Holden
Com Iceland Defense Force	
Com Fair Wings Lant	Rear Adm. R. C. Whitehead
Com Fair Quonset	
Com Fair Norfolk	
Com Fair Jacksonville	Rear Adm. O. B. Hardison

C. Naval Forces Eastern Atlantic and Mediterranean

Cin C NELM	Adm. R. B. Carney
Com Nav UKEL	Rear Adm. W. F. Boone
Com. Nav For Mid East	
Com Sixth Fleet	Vice Adm. M. B. Gardner
Com Serv For Sixth Fleet	Rear Adm H. H. McLean

D. Pacific Fleet

C in C Pac	Adm. A. W. Radford
Chief of Staff	
Com Air Pac	Vice Adm. T. L. Sprague
Com Bat Pac	
Com Cru Des Pac	Vice Adm. J. W. Roper
Com Sub Pac	Rear Adm. C. B. Momsen
Com Mine For Pac	Rear Adm. J. N. Higgins
Com Serv Pac	Rear Adm. C. F. Denebrink
Com Tra Pac	
Com Phib Pac	Rear Adm. I. N. Kiland
Phib Tra Com	Rear Adm. F. X. McInerny
Com Pac Res Flt	Vice Adm. J. L. Hall
Com Gen FMF	Maj. Gen. O. P. Smith
Com Wes Sea Fron	Vice Adm. J. L. Hall
Com N W Sector	Rear Adm. A. E. Smith
Com Alaskan Sea Fron	Rear Adm. C. A. F. Sprague
Com Haw Sea Fron	
Com First Fleet	Vice Adm. A. D. Struble
Com Third Fleet	
Com Fifth Fleet	

Pacific Fleet - cont.

Com Seventh Fleet	Vice Adm. H. M. Martin
C. T. F. 72	Rear Adm. T. H. Binford
C. T. F. 77	Rear Adm. G. R. Henderson (1)
Com. Nav FE	Vice Adm. C. T. Joy
Chief of Staff	Rear Adm. A. K. Morehouse
C. T. F. 95	Rear Adm. R. E. Libby
Com Nav For Phil	Rear Adm. S. C. Ring
Com Nav For Mar	Rear Adm. E. W. Litch
Com Nav For Ryukyus	
Com Fair West Coast	
Com Fair Seattle	
Com Fair Alameda	Rear Adm. E. C. Ewen
Com Fair Hawaii	Rear Adm. T. B. Williamson
Com Fair Japan	Capt. R. C. Sutliffe
Com Fair Guam	Capt. H. C. Doan

E. Naval Districts

1 Boston, Mass.	Rear Adm. L. H. Thebaud
3 New York, N.Y.	Rear Adm. W. S. Delany
4 Philadelphia, Pa.	Rear Adm. J. H. Brown, Jr.
5 Norfolk, Va.	
Potomac River Naval Command	Rear Adm. G. H. Fort
Severn River Naval Command	
6 Charleston, S. C.	Rear Adm. G. B. Davis

(1) On 23 August Rear Adm. John Perry was reported as Com Car Div 1 and "current" C.T.F. 77. It may be that he and Henderson are rotating this command according to World War II practice.

II. Size

A. Personnel

As of 18 July, 1951 the Navy had on board 755,000 officers and enlisted men; the Marine Corps 194,000. Under current plans the Navy will be increased to 805,000 by 30 June 1952. The Marine Corps - if legislation now pending becomes law - will be increased to not less than 300,000 or more than 400,000 officers and men, to provide four full-strength combat divisions, four full-strength air wings, and such other services as may be organic therein. If such legislation is not passed, Corps strength will be about 176,000 at the end of fiscal 1952.

B. Ships.

(1) At the beginning of August, 1951 the Navy had about 1050 vessels in commission or about to be activated. By major types the breakdown is as follows:

4 BB(1), 3 CVB, 10 CV(2), 5 CVL, 13 CVE(3), 13 CA, 4 CL, 188 DD-DDE-DDR(4), 18 DE, and 83 SS. Of these the following ships have been taken from the Reserve Fleets since June, 1950:

3 BB New Jersey (AR)
Wisconsin (AR)
Iowa (AR)

(1) On August 25 the Iowa will be recommissioned and probably placed in a standby condition.

(2) One of these may be placed in a "Ready Reserve status."

(3) Of this number 11 have been positively identified as active. It is believed the Croatan and Gilbert Islands are being readied. These may be the 2 CVE's scheduled for "Ready Reserve status." At least 3 of these CVE's are operating with MSTS.

(4) This figure does not include the 27 DD's and DE's classified as Reserve Training Ships. Statements in Congressional hearings indicate that combined DD/DE strength was to be 210 on June, 1951 instead of the 206 identified in this report. As the Uhlmann (DD687) and Wedderburn (DD684), former NRT ships, have joined the Fleet it is possible that others in this category have been similarly reallocated. By 30 June, 1952 com-

777

5 CV Antietam (PR)
Princeton (PR)
Shangri La (PR)
Tarawa (AR)
Bon Homme Richard (PR)

1 CVL Monterey (AR)

9 CVE Sitkoh Bay (PR)
Bairoko (PR)
Corregidor (AR)
Kula Gulf (AR)
Cape Esperance (PR)
Rendova (PR)
Siboney (AR)
Gilbert Islands (AR)
Croatan (AR)

4 CA Macon (AR)
Bremerton (PR)
Baltimore (PR)
Los Angeles (PR)

42 DD Bache (AR)
Charles J. Badger (PR)
Baldwin (AR)
Blue (PR)
Bradford (PR)
Braine (AR)
Brown (PR)
Buck (PR)
Caperton (AR)
Cunningham (PR)
Eaton (AR)
Erben (PR)
Evans (PR)
Hancock (PR)
Haynsworth (AR)
Henley (AR)
Hopewell (PR)
Hubbard (PR)
Hunt (PR)
Ingersoll (AR)
Jenkins (PR)
Kidd (PR)
Laws (PR)
McGowan (PR)
McLanahan (AR)
McNair (PR)
Miller (PR)
Mullany (AR)
O'Brien (PR)
Picking (PR)
Preston (PR)
Remey (PR)
Ross (PR)

178

DD - cont
Steinbel (PR)
Stockham (PR)
Stormes (AR)
The Sullivans (PR)
Thomason (PR)
Tingey (PR)
Wadleigh (PR)
Walke (PR)
Yarnall (PR)

10 DE Howard D. Crow (AR)
Frybarger (AR)
Hanna (PR)
Oliver Mitchell (PR)
Douglas A. Munro (PR)
Naifeh (PR)
William Seiverling (PR)
Walton (PR)
Whitehurst (AR)
Kenneth M. Willett (PR)

7 SS Cobia (AR)
Tench (AR)
Trutta (AR)
Lionfish (PR)
Carp (PR)
Sea Devil (PR)
Sterlet (PR)

About 400 vessels have been demothballed since July 1950. The average time for demothballing is given as 30 days, though small vessels - minesweepers, etc. - take less time. The Bairoko (CVE115) was ordered demothballed on 12 September 1950 and was operating in the combat area before the end of November.

(2) Conversions.

(a) CV's. Two CV's (Oriskany and Essex) have been modified to handle larger planes and more aviation fuel. The flight deck on a converted carrier of this type has been strengthened to handle a plane of 55,000 lbs. gross weight, elevators have been enlarged, and more powerful catapults installed. Eight more of this class are now undergoing conversion as shown below:

CV	Yard	Date in
Wasp	Brooklyn	c. June, 1949
Kearsarge	Puget Sound	February, 1950
Lake Champlain	Newport News	August, 1950
Bennington	Brooklyn	October, 1951
Leyte	Norfolk	March, 1951
Yorktown	Puget Sound	March, 1951
Randolph	Newport News	c. April, 1951
Hornet	Brooklyn	c. May, 1951

Conversion time was originally estimated at 31 months, but it is probable that this has been shortened so that the Wasp should be ready to join the Fleet shortly. (Officers are already being assigned). It is planned to convert all CV's. In 1951-52 the Bon Homme Richard will be converted at Brooklyn, the Hancock and Lexington at Puget Sound.

(b) CVL. The Bataan had her flight and hanger decks strenghtened to handle heavier planes. A similar conversion was scheduled for the Cabot but it is believed that this was not accomplished.

(c) CVE. On the 1949 program 2 CVE's were scheduled for conversion. No details known but it is assumed that conversions will be similar to those of CV's and CVL's, and that the propeller shafts will be armored as a defense against sonic torpedoes.

(d) CA/CL. The Northampton is being converted to a Task Fleet Command Ship (CLC) and will complete in December 1952. Two cruisers are being converted to guided missile ships. Probably the Oregon City (CA122) is the first of these. The conversion involves the elimination of some 8" gun turrets. About 12 cruisers are being modified to improve their anti-aircraft batteries.

(e) DD/DE. Almost 200 destroyers have been or are being modified for ASW. Presumably these conversions will be along the lines of the Fletcher class conversions of 1948-49. This involves the elimination of

 180

B turret and the substitution of a hedgehog, the conversion of Q and X turrets to twin mount 3"/50's, the elimination of one bank of torpedo tubes, the installation of new surface radar and of sonar gear, and the addition of a pole mainmast probably carrying DF equipment. Twelve fleet destroyers are being converted to radar pickets and a few DE's to DER's.

(f) SS. (See Section VI.)

(3) Construction. Few major units now under construction will join the fleet this year. The Norfolk (CLK-1), a hunter-killer ship also classified as a destroyer leader, may be in commission in 1952. The Timmerman (DD828) is expected to complete in July 1952, and the 4 Mitscher class destroyers may complete at the same time. Of the 6 fast-attack type submarines the Tang (563) and Trigger (564) were launched in June, and probably will not be in operation this year. The Trout (566) was launched late in August. Three submarine killers are under construction of which the SSK-1 was launched in March. Much emphasis is being placed on minecraft[1] and amphibious vessels.

C. Operational Units. The following major operational units have been identified and their locations (Atlantic or Pacific) indicated when known:

PhibGru 1(P), 2, 3, 4; CarDiv 1(P), 2, 3(P), 4, 5, 6(P), 14, 15, 16, 17(P); CruDiv 1(P), 2(A), 3(P), 4, 5(P); SubRon 1, 2, 3, 5, 6, 8; SubDiv 12, 21, 31, 62, 63, 81, 82; DesRon 1, 3, 4, 5(P), 6, 7, 8, 9, 11, 12(A), 13, 14, 16(A), 17, 18, 20, 28, 32, 34; DesDiv 12, 22(A), 32(P), 42, 51(P), 52, 61(A), 62, 71(P), 72(P), 81(A), 101(P), 102, 111(P), 112(P), 121(A), 122, 132, 142, 161(A), 162(A), 182(A), 201(A), 202, 322, 602; Escort DesRon 1, 2, 5; Escort DesDiv 21. Both a DesDiv and a DesRon now seem to have 4 ships.

(1) N[illegible]el - are now under construction.

D. Aircraft. At the beginning of August, 1951 the Navy had about 8200 operating aircraft of all types. Of these about 1600 were for Reserve squadrons, though plans call for the Navy and Marine Corps Reserves to operate 2001 aircraft in 1951-52. For operational types and performance data see Appendix A.

E. Air Units. Combatant units are classified as CVBG's, CVG's, VF's, VA's, VC's, VS's, VP's, VMF's, and VMFB's.

(1) CVBG. The composition of a CVBG seems to be fluid. Before the outbreak of the Korean War there were 3 of these units, each with about a hundred planes (probably 7 sixteen-plane squadrons). But it is apparent that detachments from composite squadrons are employed aboard the CVB's and probably the composition of a CVBG is an *ad hoc* arrangement for a particular mission.

(2) CVG. The composition of a CVG is also flexible. The most usual is 4 VF's and 1 VA, with one or perhaps 2 VF's equipped with jets, but here, too, elements of VC's are used to replace squadrons normally with the air group. For example pilots from VC-3 (a night fighter squadron) and VC-61 (a photo squadron) operated with CAG 11 on the *Philippine Sea* for a time during the winter of 1950-51, apparently replacing VF 111 and 112.

As of August, 1951 the Navy had 14 Carrier Air Groups (CVBG and CVG) in commission.

CAG 1 - probably based at NAS, Jacksonville.

2 - returned to the west coast in June, 1951 and is being reconstituted.

3 - probably based at NAS, Quonset Pt.

4 - probably based on the east coast.

5 - on the *Essex* in the eastern Pacific.

6 - was the *Midway* Air Group before Korea, but was shifted to

the Pacific in 1950-51. May be back now.

7 - probably on the east coast.

8 - an all-Reserve group formed at Jacksonville consisting of VF 671, VF 742, VF 916, VF 921 and VA 859.

11 - aboard the Antietam in the Pacific, August, 1951.

15 - an all-Reserve group formed at Alameda consisting of VF 653, VF 731, VF 831, VF 837 and VA 728.

17 - an east coast group, probably a CVBG.

19 - in action off Korea last spring.

101 - an all-Reserve group on the Boxer off Korea last spring.

102 - an all-Reserve group formed at San Diego in the fall of 1950. VF 874 is the only squadron definitely identified as part of this group.

(3) VF. Fighter squadrons have usually a 16-plane complement. There are presumably 56 or 59 VF squadrons in commission, of which 43 have been identified.(1) The type of plane used has been identified in only 16 cases(2), but it is probably that about 60% VF squadrons fly jets. Fighter squadrons with the 2 air groups now in process of formation are using USNR aircraft.

(4) VA. Attack squadrons have 16 plane complements. Fourteen are in commission, most of which fly AD's, with a few perhaps equipped with A2D's.

(1) VF 11, 12, 13, 14, 21, 22, 24, 31, 32, 33, 41, 43, 51, 53, 54, 61, 62, 63, 64, 65, 72, 73, 74, 111, 112, 113, 114, 151, 152, 171, 172, 174, 191, 192, 193, 653, 671, 721, 731, 742, 791, 871, 874.

(2) F2H: 11, 171, 172; F9F: 31, 61, 111, 112, 191, 721; F4U: 33, 43, 54, 63, 65, 671, 874.

(5) VS. In the spring of 1950 eight ASW VC's were designated VS, retaining their old numbers. There are 13 now in commission(1), and each probably still flying TBM's(2). These squadrons will operate off CVE's and CVL's. For tactical employment in ASW see Section VI.

(6) VC. VC squadrons are not "composite squadrons" in the sense that they have, as World War II comprons had, two types of planes. VC squadrons might better be designated "special purpose squadrons" as their function seems to be to detach small specially trained units (such as night fighters) for service with the fleet. No definite information regarding plane complements has been received but they are probably much larger than conventional squadrons. Ten have been identified as being in existence.

VC 3 is a night fighter squadron based at NAS, Moffett Field, whose function is to furnish night fighters to the Pacific Fleet. Between July, 1950 and April, 1951 pilots from this squadron, attached to CAG 11, flew F3D-1's off the Philippine Sea.

VC 4 is a night fighter squadron based at NAS, Atlantic City which furnishes nightfighters to the Atlantic Fleet. In the fall of 1950 pilots from this squadron were reported flying F2H-2N's off the F.D.R.

VC 5, based at NAS, Norfolk, was flying AJ-1's off the Coral Sea in the fall of 1950. It is difficult to understand how planes of this type could be used in small detachments and perhaps VC 5 is designed to operate as a unit. It is perhaps part of Heavy Attack Wing 1 (see below p. 184).

VC 6, presumably based on the east coast, flies P2V-3C's. It is

(1) Only 8 have been identified: VS 21, 22, 23, 24, 25(P), 26(A), 31(A) and 33. In July a Reserve VS squadron (unidentified but previously based at Floyd Bennett) was called to active duty.

(2) VS 24 and 25 are the only squadrons positively identified as having the new models.

184

a counterpart of VC 5 and may also be part of Heavy Attack Wing 1.

VC 7. No information regarding this squadron. Mentioned in orders in July, 1951.

VC 11, based at NAS, San Diego, was reported flying AD-1's early in 1950. See VC 12.

VC 12, based at NAS, Quonset Point, was reported flying AD3W's off the Saipan in July, 1950. This squadron, along with VC 11, is probably designed to furnish AEW detachments to the fleet.

VC 35. No information. Mentioned in orders, July, 1950.

VC 61 is the west coast photographic squadron. A detachment was aboard the Philippine Sea sometime between July 1950 and April 1951.

VC 62, based at NAS, Norfolk, is the east coast photographic outfit. Probably VC 61 and 62 have several types of planes.

(7) Heavy Attack Wing 1. No specific information has been received regarding this unit. It is believed that it is a special force of AJ-1's and P2V-3C's capable of carrying the atomic bomb. Presumably units of HAW 1 will operate off the CVB's though AJ-1's can be handled by converted CV's. No information regarding the size of this force has been received except an indication that VC 5 and 6 are components. In August, 1951 Captain Paul A. Ramsay succeeded Rear Admiral Goldthwaite in command. Goldthwaite's seniority would indicate that HAW 1 rates as a major command.

(8) Fleet Air Wings. Before the Korean War there were 6 Fleet Air Wings based as follows: FAW1, Guam; 2, Kaneohe; 3, Coco Solo; 4, Whidbey Island; 5, Norfolk; 14, San Diego. Two more have been created: FAW6, based in Japan, and FAW 11, location unknown.

(9) VP squadrons usually op[...] aircraft. Operational types

are now P2V-2's, P2V-3's, P2V-4's, PB4Y-2's, PBM's and P4M's[1]. Thirty squadrons have been identified.[2]

VP 1 - P2V's, NAS, Whidbey Island

2 - " " "

3 - " " , Quonset Point

4 - " " , Whidbey Island

5 - " " , Jacksonville

6 - " " , Barber's Point. This squadron returned to its base in February 1951 after 7½ months in the Far East.

7 - P2V's, NAS, Quonset Point

8 - " " "

9 - PB4Y-2's, unlocated. Commissioned in 1951.

21 - P4M-1's, NAS, Patuxent River (temporary)

22 - P2V-4's, NAS, Barber's Point. Had operated out of NAS, Naha, Okinawa.

23 - PB4Y-2's, NAS, Miami. An ASW and hurricane hunter squadron.

24 - PB4Y-2B's, east coast. A guided missile squadron. (The PB4Y-2B carries 2 ASM-N2 Bats.)

26 - at NAS, Patuxent River early in 1951. This squadron was presumably checking out in new planes, perhaps P4M-1's.

28 - PB4Y-2's, NAS, Barber's Point.

34 - PBM's, Trinidad.

40 - PBM's, commissioned early in 1951 and now operating in Korean waters.

42 - PBM's, unlocated. Returned to U.S. in the spring of 1951 after 9 months in Korean waters.

---

(1) Only one squadron (VP 21) has been identified as a P4M outfit. Probably one more is now so equipped.

(2) Testimony in Congressional hearings is confused. From the hearings one might assume that either 2[illegible] were planned for late 1951.

186

45 - PBM's, NAS, Pensacola.

46 - PBM's, unlocated. Was in Korean waters operating with the Suisan in 1950.

47 - PBM's, NAS, Sangley Point, P.I.

49 - PBM's, NAS, Norfolk.

51 - PB-1W's (B-17G's), NAAS, Miramar. An AEW squadron.

61 - Recommissioned 20 January, 1951 at NAAS, Miramar. As a photo squadron VP 61 probably flies P2V's and PB4Y's.

731 - PBM -5's, probably due to return from Far East.

772 - PB4Y-2's. Now in the Far East.

812 - NAS, Kodiak.

818 - NAS, Whidbey Island.

871 - PB4Y-2's, NAS, Sands Point, Seattle.

931 - P2V's, NAS, Whidbey Island in 1950. Probably now in Far East.

(10) Marine Corps Aviation. The Marine Corps has 2 Air Wings; MAW 1 is now in Korea and MAW 2 is based at MCAS, Cherry Point though elements were transferred to Korea and attached to MAW 1. Each wing normally has 3 Groups. There are 18 VMF and VMF (N) squadrons in commission(1), and perhaps 3 VMFB squadrons are now forming(2), though these have not been identified. VMF squadrons have a complement of 24 planes and before Korea VMF(N) squadrons were either 12 or 24. There is some evidence, however, that Marine night-fighter squadrons have been augmented. Naval Aviation News reports that VMF-513(N), the "Flying Nightmares", had a complement of 30 F4U-5's, "the

(1) Five Reserve squadrons (VMF 213, 232, 234, 235, 321) have been called to active duty as units, and the pilots from at least 4 others have been placed on active duty with existing regular squadrons. Such was the case with VMF-143.

(2) On [illegible] 1951 [illegible] Appropriations Subcommittee that the Navy [illegible] this increase. (82181, p. 620).

rest F7F's." Operational planes are F4U's (predominant), F2H-2's, F9F-2B's, F7F-3N's, and F3D-1's. The following squadrons have been identified:

VMF(N)-114 - F4U-5N's

VMF - 115 - F9F's

VMF(N) - 122 - F2H-2N's, MCAS, Cherry Point

VMF - 151 - NAS, Oakland (1950)

VMF - 211 - operated with CAG 7 aboard the Midway (1950)

VMF - 212 - Operated off the Bataan in Korean Waters, spring, 1951

VMF - 213 - Reserve squadron called to active duty.

VMF - 214 - The "Black Sheep Squadron" operated on the Sicily, beginning in August, 1950 and was still aboard in May, 1951.

VMF - 216 - no information.

VMF - 223 - MCAS, Cherry Point.

VMF - 232 - F4U's. A reserve squadron called to active duty at MCAS, El Toro

VMF - 234 - Reserve Squadron called to active duty.

VMF - 235 - F4U's. A reserve squadron called to active duty at MCAS, El Toro.

VMF -- 321 - One of the first Reserve squadrons called to active duty at MCAS, El Toro

VMF - 323 - F4U's. Operated on the Badoeng Strait during the Inchon landings.

VMF - 513(N) - F4U's and F7F's. In Korea, spring, 1951.

VMF - 531(N) - F7F's (1950)

VMF - 542(N) - F3D-1's. At MCAS El Toro in the spring of 1951 after duty in Korea.

(11) Helicopters: The Navy has two helicopter squadrons: HU-1 at NAAS, Miramar and HU-2 at NAAS, Ellyson Field, Pensacola. These are essentially training squadrons to furnish helicopter pilots for the fleet. They have a complement of 20 aircraft and plans call for an output of 24 pilots a month[1]. The Marines have at least one VMO helicopter squadron (VMO-6) which is now operating in Korea with 16 HO3S's and HLT's. It is planned to activate assault helicopter squadrons, 3 on the east coast and perhaps an equal number on the west coast. Only one (VMR 251 at MCAS, Cherry Point) has been identified. These squadrons will operate large troop-carrier types. Helicopters have been most spectacularly employed as rescue and evacuation craft. They have replaced destroyers as plane guards and VO/VS types on cruisers and battleships as naval gunfire spotters. They have proved valuable as minespotters and, while unproven in combat, are expected to be very useful in ASW.

(12) Lighter-than-Air. See Section VI.

III. Deployment.

A. Atlantic Fleet (active)

2 BB
- Missouri
- Wisconsin

3 CVB
- Coral Sea
- Midway
- Franklin D. Roosevelt

2 CV
- Oriskany (converted)
- Tarawa

4 CVL
- Cabot
- Monterey
- Saipan
- Wright

(1) In June 1950 the Navy [illegible] and had on board 120 helicopters.

7 CVE
Corregidor
Kula Gulf
Palau
Mindoro
Siboney
Gilbert Islands (in standby condition?)
Croatan

7 CA
Macon
Newport News
Rochester
Albany
Columbus
Des Moines
Salem

2 CL
Roanoke
Worcester

101 DD-DDE-DDR

6 DE

49 SS

1. Sixth Fleet. The Sixth Fleet, operating in the Mediterranean, consists of 1 CVB, 1 CV (Oriskany relieved CVL Saipan in August, 1951), 3 CA's (Salem, Newport News, Des Moines), about 20 DD's, 1 SS and auxiliaries. Admiral Gardner's flagship is the Mount Olympus. The Sixth Fleet has no bases in the Mediterranean and is entirely supplied by its train.

2. Naval Forces, Middle East. No information has been gleaned about this command. It is probably a "shadow force" and when necessary receives units from other commands.

3. Naval Forces, Germany. This force patrols the Rhine, and operates out of Karlsruhe, Mannheim, and Schierstein. Bremerhaven is the Naval Advance Base.

SECRET

190

B. Atlantic Fleet (reserve)

The Atlantic Reserve Fleet is based as follows: Boston, New London, New York, Philadelphia, Norfolk, Charleston, Green Cove Spring, Fla., and Orange, Texas.

In reserve there are 3 CV's (excluding those undergoing conversion), 28 CVE's, 4 fast BB's, 2 old BB's, 2 CB's, 6 CA's, 17 CL's, 91 DD's (this number undoubtedly reduced by undetected demothballing), 114 DE's, and 38 SS's.

C. Pacific Fleet (active)

2 BB
- New Jersey
- Iowa (to be in standby condition)

8 CV
- Boxer
- Essex (converted)
- Philippine Sea
- Princeton
- Valley Forge
- Bon Homme Richard
- Antietam
- Shangri La (in standby condition?)

1 CVL
- Bataan

6 CVE
- Badoeng Strait
- Bairoko
- Cape Esperance
- Rendova
- Sicily
- Sitkoh Bay

6 CA
- Toledo
- Helena
- Los Angeles
- St. Paul
- Baltimore (being demothballed)
- Bremerton (being demothballed)

2 CL
- Juneau
- Manchester

SECRET

191

87 DD-DDE-DDR (approximate)

12 DE (approximate)

27 PF(1)

34 SS

1. Seventh Fleet. The Seventh Fleet, commanded by Vice Admiral H. M. Martin, has as its major combat unit Task Force 77, commanded by Rear Admiral G. R. Henderson. At the beginning of August this force consisted of 1 BB (New Jersey), 3 CV's (Princeton, Boxer, with Bon Homme Richard in reserve), 1 or 2 cruisers, and about 3 destroyer divisions. It is indicated that DMS's are being extensively employed as DD's. There is no indication of the number of submarines with this force.

Task Force 72 is the detachment guarding Formosa. This force probably consists of destroyers and smaller craft and is occasionally reinforced by a cruiser. For example, the Manchester operated in TF 72 in September-October, 1950.

2. Naval Forces, Far East. Operating under this command (Vice Admiral C. T. Joy) are Task Force 95 (Blockade and Escort Force) and Task Force 90 (Amphibious Force). The United States vessels in TF 95 consist of 1 CVE (the Sicily relieved CVL Bataan in June), 1 or 2 cruisers, and about 2 destroyer divisions. Task Force 90 would, of course, draw upon TF 77 and TF 95 for its major combatant vessels.

3. Naval Forces, Philippines. This force probably contains only minor units such as minesweepers, perhaps a few destroyers and a submarine or two. VP 47 is based at Sangley Point. Rear Admiral S. C. Ring is in command.

(1) These frigates were returned by Russia before the outbreak of the Korean War and laid up in Japan. They have been used in Korean coastal waters, not only in ASW but in coastal bombardment.

191a

ADDENDUM

On August 23d the Essex, with CAG 5 aboard, was reported in action off Korea as part of TF 77. Rear Admiral John Perry was reported as ComCarDiv 1 and "current" CTF 77. It may be that Perry and Henderson are rotating this command according to World War II practice. The Boxer and Bon Homme Richard remain off Korea, the Princeton returned to the States.

192

4. Naval Forces, Marianas. This force, under the command of Rear Admiral E. W. Litch, is not known to contain any combatant vessels. Fleet Air Wing 1, based on Guam, is under this command and presumably operates at least one patrol squadron.

5. Naval Forces, Ryukyus. This force also is probably limited to patrol squadrons. VP 22 operated out of Naha, Okinawa early last spring. The name of the commanding officer is not known.

D. Pacific Fleet (reserve). The Pacific Reserve Fleet is based at Bremerton, Tacoma, Tongue Point, San Francisco, Stockton, Alameda, Mare Island, Long Beach, San Pedro and San Diego.

In reserve there are 4 CV's (excluding those undergoing conversion), 3 CVL's, 25 CVE's, 2 fast BB's, 3 old BB's, 6 CA's, 21 CL's, 96 DD's (this number probably reduced by undetected demothballing), 91 DE's, and 45 submarines.

193

IV. Bases.

During the past year and a half the Navy has concentrated on the improvement and reactivation of existing naval and air bases rather than the construction of new bases. In September, 1950 the Navy announced its intention of constructing a new fleet base in the "Atlantic area" at a cost of $23,000,000. No information regarding location has been released, but the smallness of the sum would seem to indicate that existing facilities at some base are being improved. It will be ready in 1952-53. In August, 1950 the Navy asked for funds for the construction of 3 new air bases somewhere in the far east, and in July, 1951 Admiral Thurber requested funds for 4 overseas air bases, presumably in the Atlantic, but the funds apparently were for the modernization of existing airfields. One of these bases is probably located in Iceland. In July, the late Admiral Sherman was reported to have discussed with Franco the American use of the following Spanish naval bases: Ferrol, Cadiz, Valencia, Barcelona, Cartagena, Santa Cruz, and one in Spanish Morocco.

Improvements in naval aviation facilities are directed primarily at providing air fields capable of handling jets. In December, 1950 Admiral Thurber testified that the Navy had only 2 fields - one in the U.S., the other at Pearl Harbor - with "adequate lengths and widths of runways." Consequently runways at several fields are being widened to 200 feet, lengthened to 8000 feet, and are being strengthened and resurfaced to withstand jet operations. The Navy is putting in operation 6" master jet fields", 3 on the east coast (Brunswick, Me., Oceana, Va., Cecil Field, Fla.) and 3 on the west coast (Miramar, Cal., Moffett Field, Cal., Whidbey Island, Wash.) The Marine Corps master jet fields will be at

194

Cherry Point, N. C., and El Toro, Cal.

A. Naval Bases and Stations

1. Continental

a. East Coast (major)

Boston
Newport
New London
New York-Brooklyn
Philadelphia
Norfolk
Charleston
Jacksonville(1)
Key West

b. West Coast (major)

Puget Sound
San Francisco
Long Beach
San Diego

2. Extra-continental

a) Atlantic

Argentia, N.F.
Guantanamo Bay, Cuba
San Juan, P.R.
Trinidad, B.W.I.
Cristobal, C.Z.
Bremerhaven, Germany
Karlsruhe, "
Mannheim, "
Schierstein, "

b) Pacific

Attu, Alaska
Kodiak, "
Adak, "
Pearl Harbor, T.H.
Balboa, C.Z.
Tutuila, Samoa
Kwajalein, Marshall Islands
Guam, Marianas
Subic Bay, P.I.
Okinawa, Ryukyus
Yokosuka, Japan
Tokyo, Japan
Sasebo, "

SECRET

195

B. Naval Air Stations and Facilities.

1. Continental

Designation	Location	Runways	Remarks
	Alabama		
NAS	Birmingham	3 - 5700	Reserves
	Arizona		
NAF	Litchfield Park	1 - 6000	Storage field
	California		
NAS	Alameda	5 - 5300	Jet fuel; being improved; Reserves
OLF	Camp Pendleton	1 - 6400	
MCALS	Camp Pendleton Strip #2	1 - 900	
NAAS	Crows Landing	2 - 7000	To be reopened
NAAS	El Centro	5 - 6800	Jet fuel
MCAS	El Toro, Santa Ana	5 - 7200	GCA;[1] jet fuel; to be improved
NAF	Inyokern	3 - 9000	Jet fuel; to be improved
NAS	Los Alamitos	4 - 6000	GCA; limited jet fuel; to be improved
NAAS	Miramar	2 - 6000	GCA; Jet fuel; to be improved
NAS	Moffett, Mountain View	2 - 7500	GCA; to be improved
MCALS	Mojave		Building
	Monterey	2 - 5000	
NAS	Oakland	4 - 6200	Jet fuel; to be improved; reserves
NAS	Point Mugu	1 - 5500	Jet fuel; being improved; guided missile center
NAS	San Diego	2 - 6000	Jet fuel; GCA; being improved
MCAF-LTA	Santa Ana	1 - 3000	For LTA and helicopters
	Santa Barbara	5 - 5100	

(1) Ground Controlled Approach

SECRET

196

Designation	Location	Runways	Remarks
	Calif. - cont		
MCALS	Santa Maria		Building
	Colorado		
NAS	Denver	2 - 8000	Reserves
	D. C.		
NAS	Anacostia	3 - 5000	Reserves
	Florida		
NAAS	Bronson Pensacola	4 - 4000	Reopened
NAAS	Cecil Field Jacksonville	4 - 5100	Jet 3 fuel; being improved
OLF	Choctaw Bagdad	3 - 4000	
NAAS	Corry Field Pensacola	8 - 4200	Being improved
OLF	Ellyson Pensacola	8 - 3600	
OLF	Fort Barrancas		
NAS	Jacksonville	4 - 5800	Jet 3 fuel; being improved
NAS	Key West	3 - 7000	GCA; being improved
OLF	Lee Green Cove Spgs	4 - 5100	GCA
OLF	Martin Field		Being improved
NAS	Miami	5 - 7400	Reserves
OLF	Opalocka		
NAS	Pensacola	5 - 2800	Being improved
NAAS	Sanford	4 - 6000	Jet 3 fuel; being improved
NAAS	Saufley Pensacola	4 - 6200	GCA; being improved
OLF	Spencer Pace	4 - 1800	
NAAS	Whiting Milton	4 - 6000	Jet fuel; being improved
	Georgia		
NAS	Atlanta	3 - 4000	Jet 3 fuel; GCA; Reserves
NAF-LTA	Glynco	2 - [illegible]800	Being improved

Designation	Location	Runways	Remarks
	Illinois		
	Arlington Hghts	4 - 2900	
NAS	Glenview	5 - 6300	GCA; being improved; reserves
	Kansas		
NAS	Hutchinson	4 - 7000	Reserves
NAS	Olathe	3 - 5300	GCA; jet fuel; reserves
	Louisiana		
NAS	New Orleans	3 - 3400	Reserves
	Maine		
NAF	Brunswick	3 - 6000	Reopened; being improved
NAIS	Sanford	3 - 6000	Being improved
	Maryland		
NAS	Patuxent	4 - 9700	GCA; being improved
NAIS	Webster Field Beachville	3 - 5000	Being reactivated
	Massachusetts		
NAF	S. Weymouth	4 - 4100	To be reactivated for Reserves and regular LTA
NAS	Squantum Boston	3 - 4100	GCA; for Reserves and regular LTA
	Michigan		
NAS	Grosse Ile Detroit	3 - 4700	GCA; jet fuel; to be improved; Reserves
	Minnesota		
NAS	Minneapolis	5 - 6500	GCA; being improved; reserves
	Missouri		
NAS	St. Louis	3 - 6000	GCA; to be improved; Reserves
OLF	Vichy	3 - 5500	
	Nebraska		
	Lincoln	5 - 7100	Jet 3 fuel
	Nevada		
OLF	Fallon	3 - 7000	To be reopened

Designation	Location	Runways	Remarks
	New Jersey		
NAS	Atlantic City	4 - 5100	GCA; Jet 3 fuel; to be improved
NAS	Lakehurst	3 - 3800	To be improved; LTA
	New York		
NAS	Floyd Bennett Field New York	4 - 5500	GCA; jet fuel; Reserves
NAS	Niagara Falls	5 - 5500	To be improved; Reserves
	North Carolina		
OLF	Bogue Swansboro	3 - 4000	
MCAS	Cherry Point	8 - 7200	GCA; jet 3 fuel; to be improved
OLF	Edenton	4 - 7100	
NAF-LTA	Weeksville	2 - 3200	LTA
MCALS	Wilmington		Building
OLF	Peterfield Point Jacksonville	3 - 5000	LTA; helicopters
	Ohio		
NAS	Akron	4 - 4400	Reserves
NAS	Columbus	4 - 5000	GCA; Reserves
	Pennsylvania		
NAS	Johnsville	3 - 4600	Being improved; Naval Aviation Development Center
NAAS	Mustin Philadelphia	3 - 5200	Jet fuel
NAS	Willow Grove	3 - 4000	GCA; to be improved; Reserves
	Rhode Island		
NAAS	Charlestown	3 - 5800	
NAS	Quonset Point Providence	4 - 6000	GCA; being improved; jet fuel
	South Carolina		
MCALS	Beaufort,		
	Congaree Air Base [illegible]	3 - 5100	

199

Designation	Location	Runways	Remarks
	South Carolina -ct.		
OLF	Parris Island	4 - 6000	
	Tennessee		
NAS	Memphis	4 - 5000	GCA; Reserves
	Texas		
NAAS	Cabaniss	4 - 5000	
NAAS	Chase Field		
NAS	Corpus Christi	4 - 5800	GCA; jet fuel
NAS	Dallas Hensley	3 - 7500	GCA; Reserves
NAAS	Kingsville	4 - 6100	Reopened; to be improved
	Virginia		
NAF	Chincoteague	3 - 6000	
NAF	Dahlgren	3 - 4000	
NAS	Norfolk, Chambers	3 - 2600	GCA,
	East	3 - 4300	Jet fuel; being improved
NAAS	Oceana	4 - 6000	Reopened; to be improved
MCAS	Quantico	2 - 4200	
	Washington		
NAS	Seattle	2 - 4800	GCA; Reserves
	Shelton, Mason Co.	2 - 5300	
NAS	Spokane	3 - 8200	jet fuel; Reserves
NAS	Whidbey Island Oak Harbor	2 - 7100	GCA; to be improved

2. Extra-continental

a. Atlantic

Iceland (exact location unknown)

NAS, Argentia, N.F.

NAS, Guantanamo Bay, Cuba

NAS, San Juan, P. R.

NAS, Trinidad, B.W.I.

NAS, Coco Solo, C.Z.

NAS, Port Lyautey, Fr. Mor.

b. Pacific

NAS, Adak, Alaska

NAS, Kodiak, "

NAS, Atsuki, Japan

NAF, Yokosuka, "

NAF, Naha, Okinawa

NAS, Sangley Point, P.I.

NAS, Agana, Guam

NAS, Kwajalein, Marshall Islands

NAF(?), Wake Island

NAF(?), Midway Island

NAS, Barber's Point, T.H.

NAS, Kaneohe, T.H.[1]

NAS, Ford Island, T.H.

[1] Kaneohe is to be reactivated as a MACS.

V. Weapons.

A. Guided Missiles. The Navy's guided missile program has high priority, particularly that part of the program pertaining to air defense. At present 3 vessels are equipped to launch guided missiles: the Norton Sound (AV 11), the Cusk (SSG348), and the Carbonero (SSG337). Modification is apparently simple. Two cruisers are now under conversion to guided missile ships. Despite the high priority of the program guided missiles are still in the test and evaluation stage, and statements in Congressional hearings indicate that no substantial quantity of guided missiles will be available for combat use this year.(1) For details see the general statement on Weapons in this report.

B. Conventional Shipborne Weapons. Developments in naval gunnery have been pointed toward automatic fire control and faster rates of fire. The three heavy cruisers of the Des Moines class were the first to have all guns (including the main 8" batteries) fully automatic. The fire from the main batteries is reported as 4 times faster than the old rate, or about 8 rounds per gun per minute. Cartridge cases are used instead of conventional big-gun loadings. New 3" 50 cal. A/A guns are being placed aboard many ships. These guns have radar control which automatically picks up the aircraft or missile, computes, makes settings, and opens fire. These guns fire at the rate of 50 rounds per gun per minute. Admiral Schoeffel, testifying before a Congressional committee on May 14, 1951, speaks of the 3-inch-70 and the 5-inch-54 rapid fire guns as "the two latest anti-aircraft guns we have today," but no information has been

(1) One squadron (VP24) is believed to be still equipped with ASM-N-2 "Bats," but the "Bat's" combat effectiveness is highly suspect.

received concerning production or installations.

C. Aircraft Armament. There have been few new developments in this field. On fighter planes 20 mm. cannon are replacing or augmenting 50 cal. machine guns, and much emphasis is being placed on rockets. The Navy now has 5 types: the 11.75" Tiny Tim, the 5" HVAR Holy Moses, the 3.5", the 2.75" Mighty Mouse, and the newly developed 6.5" Ram anti-tank rocket. All but the Mighty Mouse (an air-to-air missile) have been tested in combat. Little information about bombs has been received. The effectiveness of the napalm bomb has been demonstrated in Korea (the Navy uses belly tanks as containers) and redesigned bombs for jet aircraft have apparently reached the fleet. For details see the general weapons section of this report.

D. Mines and Torpedoes. In this field security is excellent. Only one technical reference to mines was found - an account of the magnetic mine fuse developed during World War II. (Bell Laboratories Record, July, 1947). Scattered references to torpedoes have been found, such as Admiral Schoeffel's statement that a new sonic torpedo will be the Navy's "Sunday punch" against submarines, but no performance details have been discovered. Information about mine countermeasures is also meager. Indications are that new type mines are causing the Navy concern. Increase in minesweepers has been proportionately greater than in any other type of vessel, and at the beginning of the Korean War the Navy was forced to lease Japanese fishing boats to use as sweepers. In May, 1951 Admiral Sherman stated that the Navy had "learned a great many lessons" operating against Russian-type mines off Korea, but few details of countermeasures are available. Heliocopters have proved successful in mine spotting as have PBM's - notably those of VP42. Building under the 1950 program are 2 "countermeasures" of 3,100 tons each which may be mine vessels of a new type.

VI. Undersea Warfare

In 1946 the Navy created the Undersea Warfare Division (Op. 31, under DCNO (Operations)) to coordinate operations and development in the fields of submarine warfare, ASW, mine warfare, and harbor defense.

A. Anti-Submarine Warfare.

High officials in the Navy Department have frequently stated that ASW has "Number One Priority" in all naval planning and development. Emphasis upon the program was greatly increased with the appointment of Admiral Sherman as CNO in November 1949. He recalled Vice Admiral F. S. Low to direct a special survey of the ASW problem, as a result of which the Defense Department increased its appropriation for ASW from $40 million to approximately $100 million early in 1950. Since that time high appropriations continue to be made for work in this field, especially for such items as electronics research and the conversion of DD's to DDE's.

Occasionally announcements of a vague nature are made about spectacular developments, typical of which was the statement by the Director of Defense Mobilization that surface craft "are being equipped with detection devices 10 times as effective as those used in World War II."(1) Hints concerning improved organization are given by such items as the appropriation of funds for a combined ASW plot and administration building at CinC Lant Headquarters, Norfolk. The frequent mention of the Surface AS Development Detachment at Key West and the Fleet Sonar Schools at Key West and San Diego indicate that tactical research and training are in continual progress. In particulars, however, a high degree of security has

(1) Report to the President, No. 1, 1 April, 1951, p. 8.

been maintained. Significant performance figures for weapons and detection devices never appear, nor can they be inferred directly from such information as has been released. Nothing in the public press reveals any new departures in basic research.

The impressions received from public information are (1) that the active fleet is at present provided essentially with the same equipment as was used at the end of World War II(1), (2) that all important new developments are along the lines of the more effective use of old equipment, and (3) that basic research is concentrated upon improving the devices based on the old principles for the detection and destruction of submarines rather than upon the discovery and exploitation of any new principles. In view of these impressions, the greatest importance attaches to current information regarding the ships and aircraft, weapons and detection devices now known to be employed for ASW.

1. Ships.

a. DD's, DDE's, and DE's. Great emphasis is now placed upon the use of larger and faster surface vessels of these types for ASW. Only a few DE's, approximately 20, are in commission, since they are not capable of sufficient speed to cope with newest types of submarine. In April 1950 the Navy asked for money to convert but 3 DE's for ASW, whereas funds were requested to convert over 100 DD's of the 692 Class to DDE's. At present it is believed that approximately 200 DD's of the Gearing, Fletcher and Summer types have been or are being modified for this purpose.

Conversion for ASW involves replacement of "B" turret with a hedgehog;

(1)That this is true of electronic equipment was stated by Capt. W. H. Biltz, assistant chief Bu Ships (electronics), before a subcommittee of the House of Representatives Committee on Appropriations on 10 May 1951.

replacement of "Q" and "X" turrets with twin-mount 3"/50's; elimination of one bank of torpedo tubes; installation of squids amidships and aft, new surface radar and sonar gear; and the addition of a pole mainmast, probably to be employed as a DF and/or sono-buoy antenna.

b. CVL's and CVE's. The Navy plans to use hunter-killer groups consisting of a carrier and escorts as in World War II. CVE's of the *Sicily* class, strengthened to handle heavier planes, will be employed, and to fill the need for greater speed the *Bataan* has been refitted as a CVL(K). The *Cabot* is slated for similar conversion. From these carriers will operate the new VS squadrons flying Grumman Guardians.

Hunter-killer groups will protect convoys in the conventional fashion. Antisubmarine protection of task forces will be given by escorts and attack planes from the carriers. Under the peculiar conditions of the Korean war, patrol planes have borne the major share of protecting naval units.

c. Submarines. Funds were appropriated in 1948 and 1949 for the construction of three 765-ton SSK's (K1, K2, K3). The K-1 was launched by the Electric Boat Company, Groton, Conn., on 2 March 1951. The other two will come off the ways of the Mare Island Naval Shipyard. In 1950 the 1,560-ton *Grouper* was converted to an SSK (large). The *Ray* and *Redfin* are undergoing conversion, and four others of the *Gato-Balao* class are scheduled for similar modification.

On the subject of these types security has been very tight. Not even pictures have been released. It can only be surmised that SSK's will carry long-range sonar gear and surface radar, and be equipped with sonic torpedoes as a major weapon.

SSK's can be used most effectively, not on the open sea, but in rest[illegible] enemy bases where [illegible]own that submarine

 206

traffic will be relatively heavy. Vice Admiral Lockwood has publicly stated that U. S. strategy calls for sending atomic-powered subs off the Russians' ports to destroy their undersea craft coming and going.(1) It is possible also that guided-missile subs, like the Cusk, may be used to raid enemy submarine bases.

d. Experimental CL(K). Under construction is the Norfolk, built on a hull similar to the San Diego class, and designed as a "killer ship." Building of one other of this type has been deferred. Nothing is known of the characteristics and armament of the CL(K), but its virtues for this work will be speed equal to a fast DD, greater protection, longer range, and heavier armament. It can be the most effective surface striking arm of a hunter-killer group.

2. Aircraft.

a. Patrol Planes.

The new patrol planes especially designed for ASW are the P2V and the P5M flying boat.

The latest models of the P2V have a range of over 4000 miles loaded, maximum speed of about 350k, cruising speed of 170k. They can carry 8,000-10,000 lb. of depth charges and/or torpedoes, 16x5" rockets. Their armament consists of 6x20 mm. cannon fixed in nose, 2x.50 cal. flexible machine guns in the top turret, the same in the power tail turret. They are said to be equipped with a new type radar capable of spotting a snorkel at a distance of "several miles," but radar range will vary greatly with the condition of the sea. The P2V-4 carries M.A.D. P2V's have taken off CVB's, but it is presumed that these planes will be used for ASW work

(1) Saturday Evening Post, 22 July, 1950, p. 118.

207

from land bases.

The P5M, now being developed, has a range of over 3,000 miles, a maximum speed of 270k, cruising speed of 140k. It can carry about 12,000 lbs. of depth charges and/or torpedoes. Rockets are fitted in wings, and .50 cal. machine guns in nose, mid-upper, and tail turrets. Its radar is probably the same as in the P2V.(1) It may carry M.A.D.

In addition to the P2V's, VP squadrons are now flying such older types as the PB4Y-2, PBM, and P4M. P5M's are expected in the fleet next year. It is conceivable that the XP5Y may be used for ASW, but only 12 are on order. Their range is reported as 5000 miles, maximum speed as 390k. Nothing is known of their armament.

b. Carrier Planes.

The size and weight of the equipment necessary for effective AS work has obliged the Navy to create hunter-killer teams of carrier aircraft, one carrying detection gear, the other armament. The plane especially developed for this purpose is the much publicized Grumman Guardian, heaviest of single-engine carrier planes. The AF-2W, the search member of the team, carries under its fuselage a "guppy" containing radar by means of which a sub is to be detected and tracked. The AF-2S, the attack plane, carries rockets, depth charges, and torpedoes, and some models are equipped with a searchlight and APS-30 radar under the wings

(1) Popular Science, March 1950, p. 103, states "A legitimate guess is that this aircraft would be able to squat on the wet almost anywhere and listen for subs." This sounds like sheer nonsense. A flying boat on the water cannot attack a sub if detected. Any plane can "listen" better in the air with sonobuoys or M.A.D. than it could with any airborne device on the water.

for homing on a sub. Maximum speed of these planes is 350k at sea level. No other specific information on its flight characteristics has been released. It is said to be in large-scale production at Bethpage, N.Y.

The functions of the AF-2W can be performed by the AD-3W, which has been delivered to the fleet in large numbers. Other attack planes like the TBM, AD, and A2D, can do the work of the AF-2S. But the plan is to equip all VS squadrons with Guardians.

c. Lighter-than-Air.

The Navy plans to use blimps extensively for AS patrol. This becomes feasible now that it is presumed that subs will run snorkeling in dangerous waters rather than stay surfaced to fight off enemy aircraft.

In 1950 two airship squadrons of 11 K-type blimps each were operating, ZP-1 from Weeksville, ZP-2 from Lakehurst. ZP-3 was commissioned at Lakehurst on 28 Sept. 1950. Four other K-types were assigned to reserve units. Of the 130-odd K-types built in World War II it is presumed that a large number are in storage.

Four M-types are operational. Four N-types are under construction, and 18 more are on order. The few GT- and L-types on hand are not combatant airships, being used only for experiment. All blimps are built by Goodyear.

All three combatant types have a maximum speed of 75k. K-type can remain aloft 24 hours. One M-type has set a record of 170 hours in the air. No endurance figure for the N-type is available.

The Navy has experimented successfully with the operation of blimps off CVE's, but it is probable that they will operate mostly from shore bases. The primary function of the blimp is to detect and track subs, calling in heavier-than-air craft and surface vessels to make the kill. Hence the blimp is lightly armed. Normally one would carry 2 to 4 depth

charges, and perhaps a sonic torpedo. The blimp's major cargo is detection equipment: long-range radar, MAD, and sono-buoys.

d. Helicopters.

In 1950 the Navy sponsored a competition to design an AS helicopter. Bell was awarded a $5 million contract to construct three experimental models, designated XHSL-1. As far as is known these helicopters have not yet reached the testing stage. They are designed to carry radar, sono-buoys, depth-charges, and "recoil-less bazookas."(1)

The tactical function of the helicopter is not known, but it is conjectured that it can best be used as close AS cover for task forces and convoys, perhaps also for inshore patrol.

3. Weapons.

a. Depth-Charges.

Standard equipment for DD's, DDE's, and DE's is the Mark-9 depth charge, torpex-loaded, weighing 600 lbs. Hydrostatic fuzes can be set for depths to approximately 400 feet. Depth-charges are projected from stern-racks and K-guns in a concentrated pattern about a contact. Mark-9's are lethal to a sub within about 35 feet.

Aircraft may carry 250 lb. or 325 lb. torpex-loaded depth charges. They are dropped in a "stick" diagonally across the sub's path. Standard setting for hydrostatic fuzes is 25 feet. Aerial depth charges are lethal within 10 to 15 feet of the pressure hull.

b. Forward-Firing Weapons.

DDE's and DE's carry on their forward decks a hedgehog, which is a multiple spigot mortar that fires 24 contact-fuzed projectiles in a

(1) American Helicopter, July 1950, p. 24.

pattern approximately 200 yards over the bow. The projectiles contain 32 lbs. of torpex. They are lethal on contact.

Squids, fitted amidships and aft, are three-barreled mortars firing minol-loaded projectiles, also lethal on contact.

The mousetrap is a variant of the hedgehog, firing the same projectiles from open rails. Mousetraps were designed for PC's, SC's, and lighter AS craft which cannot withstand the weight and recoil of a hedgehog. The rails are mounted in two sets of four, one above the other. They cannot be swiveled, as can the hedgehog and squid, but must be aimed by the course of the boat.

It is believed that experiments have been made with VT fuzes on forward-firi missiles, but with what success is not known. In May 1951 Admiral Schoeffel announced the development of a rapid-fire shipborne "rocket launcher" which is probably an improvement on the hedgehog-mousetrap device. The under-water characteristics of the projectile are reported to have been greatly improved.

c. Sonic Torpedoes.

Toward the end of World War II Naval aircraft employed a sonic torpedo with great success against German U-boats. This weapon located the sub by the sound of its propellers. Nothing is known about the devel-opment of the torpedo except general reports that models have now been created for use by surface craft and SSK's. Admiral Schoeffel announces that this weapon is the Navy's "Sunday punch" against a submerged submarine.

d. Airborne Rockets.

The 3.5" and 5" solid shot rockets are standard equipment on AS aircraft. Four to eight may be carried in zero-length launchers under each wing. They may be fired in various combinations. The pilot will normally release them in salvoes of two or four as he moves in on the target.

The 12" Tiny Tim rocket with an explosive head may be employed in ASW, but the solid shot head has proved highly effective in tearing holes through a pressure hull. It is said that the trajectory and underwater carriage of the 3.5" and 5" rockets have been greatly improved. The 3.5" rocket has a lethal underwater range of 130' at a 15° angle of entrance.

e. Mines.

The Navy plans to mine areas likely to be extensively used by enemy undersea craft. In enemy waters mining will doubtless be carried out primarily by submarines, by aircraft when the area is within patrol range. The depth of water, type of bottom, etc. will determine whether contact, acoustic, or magnetic types are employed.

4. Detection Devices.

a. Sonar.

Sonar gear is standard equipment on all AS surface vessels. This device, which detects a submarine by echo-ranging beneath the surface, was highly effective in World War II. No data has been published on the effective range of sonar, but it is known that much depends upon the training and alertness of the operator.

This equipment is very expensive and takes 15 to 20 months to procure. The fleet is still equipped with World War II sonar, much of which has been made obsolete by the range of new torpedoes.

b. Sono-Buoys.

The sono-buoy is a device equipped with a hydrophone and VHF transmitter. When dropped into the water, the buoy's transmitter broadcasts the sounds picked up by the hydrophone. Range depends upon speed of sub, intensity of other underwater noises. This device was used effectively by aircraft in World War II. One buoy was dropped nearest the point at which a sub was thought to be. Four others were dropped about it in a diamond pattern, with each buoy on a different frequency, the

pilot could track the submerged craft as it neared or veered away from the five points. If the sub moved out of the pattern, other buoys could be dropped around its path.

Planes can now carry 12 or more sonobuoys. It is reported they are being used by surface craft as well.

c. Radar.

All AS ships and planes carry one or another type of radar. Security has been very tight on radar performance. No figures have ever been published regarding their range against surfaced subs or snorkels, though claims have been made that the heavy gear in the P2V-4 can pick up a snorkel at a distance of "several miles." Radar is the primary search device of the aircraft and is used by attack planes for homing on the target. The effectiveness of aircraft in ASW is in direct ratio to the effectiveness of radar.

d. Direction Finders.

In World War II shore-based direction finders were used to pick up the radio transmissions of enemy U-boats, some of which were picked up at a distance of 9,000 miles. Hunter-killer groups could be vectored to the vicinity in which the sub was detected. DF was also later installed on surface craft to pick up transmissions at shorter range. The usual procedure was to have antennae on the CVE of a task group and on one or more of the escorts, from which a "fix" could be taken on a "talking" sub.

DF was less effective as German U-boats learned to keep as silent as possible, but it is presumed that both shore- and ship-based equipment will continue in use.

e. Magnetic Airborne Detector.

A device carried on low-flying blimps and patrol planes operating in restricted waters, which picks up a submerging sub by the disturbance

it makes in a magnetic field. Its range is not known, but it is believed that the device cannot spot a sub running much below periscope depth.

5. Conclusions.

In a hearing of subcommittee of the House Armed Services Committee in Dec. 1950, Rep. McMahon suggested that the Navy had progressed as far toward a solution of the anti-submarine problem as a man who, having left Washington for New York, had reached Philadelphia. In the light of the information assembled above, it would seem that the progress made consisted primarily in the development of (1) ships, (2) aircraft, and (3) weapons to deal adequately with enemy submarines, and (4) the beginning of the procedures necessary to procure them.

Yet remaining to be done are to (1) step up procurement of DDE's and aircraft to a point where U.S. and allied AS forces are adequate to deal with enemy submarines in all the oceans of the world, and (2) improve detection devices so that the odds on locating snorkeling and submerged craft are far better than they are now. Any potential enemy who was acquainted with the history of ASW in WWII would know that two of the most important factors contributing to the success of the United Nations were (a) the American improvement to great effectiveness of devices invented for the most part by America's allies, and (b) the procurement of ships and aircraft in such great numbers that overwhelming force could be brought to bear against enemy underseas operations everywhere. At present a potential enemy might well calculate he did not have to deal with either of these factors. If the boasts made about new detection devices are to be believed, it is clear that these devices are still in the experimental stage. With only 30 VP, 13 VS, and 3 ZP squadrons, American naval air forces are obviously not great enough, and even when the number of DDE's reaches 200 it is doubtful

if they will be sufficient for [illegible] escort and hunter-killer operations which they may be called upon to perform.(1) It is suggested, therefore, that enemy strategy and tactics would at first be designed primarily to take advantage of these weaknesses.

B. Submarines.

The total number of SS capable of combat action is 167, of which 82 are in the reserve fleets. There are 26 non-operational training boats. The total of 85 SS's in the active fleet as of 30 June 1951 (of which 83 have been identified) break down into the following categories:

49	SS (standard attack types)
23	SS (guppy conversions)
4	SSR
2	SSR (Arctic)
1	SSP
1	ASSP
1	ASSA
1	SSK
1	SSO
2	SSG
85	

Under process of conversion from the reserve fleet are 28, which break down into the following categories:

16	SS (guppy conversions)
4	SSR
1	SSG
7	SSK (large)
28	

There are at present 13 new submarines under construction, though in

(1) The [illegible] Coast Guard craft [illegible] significant addition to surface forces.

215

various stages of completion, which break down into the following categories:

3 SSK (K1, K2, K[illegible])
6 SS (Tang type)
1 SST
1 SSN
1 SS (250 ton)
1 SSX
13

According to testimony given by Admiral Sherman in the spring of 1951, the total number of submarines in the active fleet will be 100 by 30 June, 1952, presumably by conversion, new construction and demothballing.

If the numbers under the various designations indicate the emphasis which the Navy is putting upon the different functions which a submarine may be called upon to perform, then evidently the most important are (1) attack, (2) anti-submarine warfare, (3) picket duty, and (4) guided-missile launching.

For the function of attack, the most important development is the Guppy. This modification involves streamlining of the deck housing, removal of deck guns, addition of a snorkel, improved engines.(1) Guppies are said to be capable of 17k underwater for 1/2 hour, 12k for 3 to 4 hours. On a test run the SS Pickerel ran submerged snorkeling from Hong Kong to Pearl Harbor, 5200 miles in 21 days and 1 hour, at an average speed of 10.3k.

Guppy conversions and the Tang class are equipped with the orthodox diesel-electric power plant. Battery-power capacity has been greatly

(1)The new Tang class includes all the improved characteristics of the converted Guppy. Admiral Sherman testified in Apr. 1950 that all subs will eventually be equipped with snorkels, though [illegible] of the active [illegible] fleet were thus equipped [illegible]time.

enlarged, and the Cleveland Diesel Engine Division of General Motors has developed a new 16-cylinder, 2-cycle engine which is much lighter and smaller than earlier sub diesels. The Navy is experimenting with the Kreislauf closed-cycle diesel and also with the Walter hydrogen-peroxide engine, but neither are yet employed in any subs in the active fleet. The first SSN has been launched at Groton, and according to official releases, the Navy hopes for much from the nuclear-fission engine, but this boat is not yet operational.

On the development of the SSK, see Section VI, A1, c of this report.

The SSR is a standard attack submarine with reduced armament and the addition of long-range radar. It is presumed that they are to be employed primarily for AEW, since large naval forces will probably not oppose the U. S. fleet in any future war.

Successful experiments have already been carried out with the first SSG, the Cusk, which fired a V-1 "Loon" from her after-deck. Operation Miki in October 1949 indicated that subs may be simply, cheaply, and quickly converted to SSG's by the construction of a ramp for the missile. An SSG can carry one or two Loons with a tested range of 80 miles, a possible range of 200 miles. Use of atomic warheads in such missiles is frequently mentioned as a possible development.

Attack submarines now carry the standard 21" torpedo, both steam and electric driven. It is reported that a sonic torpedo for submarines, developed from a German model, is now in production.

Many experiments are being made in numerous different phases of submarine development. Examples are (1) new color schemes for sub interiors to ease the psychological strain on the crew, (2) a semi-automatic submarine camera (Mark 4), which allows the captain to keep his target in view except at the moment the picture is being taken, (3) new foods, which occupy 25% less space, produce 6% less garbage. As in the cases of (1) and (3) the

direction of much experimentation is to increase the endurance both of ship and crew, indicating that even more lengthy war patrols may be planned for the future.

The reserve program launched at the end of World War II was planned to train 13,000 officers and men at 30 naval stations on both coasts. There were organized 58 submarine reserve divisions, each consisting of 19 officers and 200 men.

APPENDIX A: NAVAL AIRCRAFT

AD

Designations	AD1, AD2, AD3, AD5. (AD1Q, AD2Q)
Manufacturer	Douglas.
Name	Skyraider.
	Carrier-based attack plane.
	Can bomb from medium altitude or dive.

AD1

Power	1 Wright R-3350-24.
	Hp. normal 2100.
	Hp. take-off 2400.
	also
	1 Wright R-3350-24W.
	Hp. take-off 2500.
Speed	Max. between 350 and 400 mph.
Range	1500-1700 miles.
Altitude	Service ceiling 25,000'.
Armament	2 20 mm cannon.
	12 5" rockets and 2 12" Tiny Tim rockets.
	Torpedo under fuselage.
	Bomb load normal, 4000 lbs, max. 6000 lbs.
Remarks	Photo. take-off from USS Valley Forge with 3 2000-lb. bombs.

AD1Q

AD1 equipped as radar counter-measure aircaaft.

AD2

Power	1 Wright R-3350-26W.
	or
	1 Wright R-3350-26WA.
	Hp. 2700 for take-off at 2900 rpm.
Speed	360 mph. at 3500'.
Range	1500 miles.
	Fuel capacity 390 gals. plus 2 150 gal. wing-tanks.
Altitude	Service ceiling 25,000'.
	Rate of climb 1600 fpm.
Armament	No fresh data.
	Crew 1-3.

AD2Q

AD2 equipped as radar counter-measure aircraft.

AD3

Improved version of AD2.

Power

Speed

Range

Altitude

Armament

AD3N

Night-flying radar counter-measure aircraft with 2 additional crew members.

AD3W

Early warning radar aircraft with 2 AEW operators.

AD5

No data.

AF2

Designations AF2S, AF2W.

Manufacturer Grumman.

Name Guardian.

Work as a submarine hunting team.

AF2W

With radar and electronic devices for locating sub.

Power 1 P & W R-2800-46 ~~[illegible]~~

2400 hp.

Speed Max. 350 mph. at sea level. ~~[illegible]~~

Range

Altitude

Crew 1-2.

Weight near 22,000 lbs. ~~[illegible]~~

AF2S

Submarine hunter; to work in collaboration with AF2W.

Same performance.

AJ1

Designations AJ1.

Manufacturer North American.

Name

221

AJ1 (cont.)

Carrier-borne attack and search aircraft.

Designed to carry A-bombs.

Power 2 P & W R-2800-34W.

2300 hp. 44W XXXXX.

Plus 1 Allison J-33-A-12 in the tail.

A-10.

Speed Sea level , 500 mph. on all engines.

425 mph. on piston engines alone.

Range Over 3000 miles.

Altitude Service ceiling 40,000'.

Rate of climb 4,000 fpm.

Crew 3.

Bomb Load Can carry atom bomb from carrier.

AM1

Designations AM1.

Manufacturer Martin.

Name Mauler.

Single-seat attack bomber.

Power 1 P & W R-4360-4.

3000 up for take-off.

Speed Max. over 350 mph.

Max. diving speed over 500.

Dive brakes slow dive to 350 mph.

Range Max. ~~xxxxx1200xxxxxxx~~

over 2000 miles.

AM1 (cont.)

222

Altitude

Armament 4 20 mm. cannon.

3 2200-lb. torpedoes plus 12 5" rockets, 2 Tiny Tims.

Total weight, 10,689 lbs.

Assigned to Naval Reserve. Deliveries complete.

82 assigned to NAR.

A2D1

Designations A2D1.

Manufacturer Douglas.

Name Skyshark.

Successor to AD Skyraider.

Turbo-prop engine. Prototype flight June 1, 1950.

In early production stage.

Power Allison T-40 [two T-38 coupled side by side]

XT40-A-2.

5500 hp.

Will also use P & W T34 turboprop.

Speed 500-550 mph.

Range 1600 with wing tanks.

Normal fuel capacity 800 gals. with wing tanks.

Altitude Twice the ceiling and rate of climb (3200 fpm.) of AD.

Load 4 times the amount of bombs per gallon of fuel as jet attack planes.

Can be flown from the smallest type of carrier (CV-55).

3 external bomb racks, rocket launchers for 5" rockets.

A2D1 (cont.)

223

Remarks	Claim that A2D can be used for troop-support. It can hover over combat area by cutting out one turbine.

XA3D1

Manufacturer	Douglas
	65,000-lb. jet bomber.
	Can operate only from "Coral Sea" type of carrier.

FH1

Designations	FH1.
Manufacturer	McDonnell.
Name	Phantom.
Power	2 Westinghouse J-30-WE-20.
	JATO or catapult launch.
Speed	Max. 505 mph. at 30,000'.
Range	Combat range 690 miles. Ferry range 1400 miles.
	Fuel capacity 375 gals.
	Plus belly tank 295 gals.
Altitude	Service ceiling 43,000'.
Armament	4 cal. .50 guns in nose.
	8 rocket launchers may be fitted under wings.

FJ1

Designations	FJ1.
Manufacturer	North American.
Name	Fury.

FJ1 (cont.)

Jet-fighter, single-seat, carrier and land operations.

Power 1 Allison J-35-A-5.

4000 lb. s.t.

Speed Max. over 550 mph.

Cruising over 350 mph.

Stalling 102.9 mph.

Range With drop tanks over 1500 miles.

Endurance (max.) over 4 hours.

Altitude Climb at sea level 5,1250 fpm.

Armament 6 cal. .50 guns in nose.

Used for jet fighter familiarization.

FJ2

Production contract awarded July 2, 1951.

Developed from FJ1 and F86.

F2H

Designations F2H, F2H2, F2H2N.

Manufacturer McDonnell.

Name Banshee.

Jet fighter, successor to FH1. Long nose can hold radar equipment. All-weather night interceptor. Weight about 10 tons. Will fly only off Midway class.

Power 2 Westinghouse J-34-WE-34.

Each 3150 lbs. s.t.

225

F2H (cont.)

Speed	Max. at sea level 630-plus mph.
	At critical height 575 mph.
	500 mph at 50,000' ~~XXXXXXXXXXXXXXXXXXX~~
Range	Tactical radius 600 miles.
	Ferry range 2250.
Altitude	Ceiling 56,000'.
	Rate of climb 9000 fpm.
	Get to 50,000' in less than 15 minutes.
Armament	4 20 mm. cannon in lower nose.

F2H2

Power	2 Westinghouse J34-WE-22.
	3000 hp.
Speed	575-plus mph. at sea level.
	In the 600 mph. class.
	Cruising 325-plus mph.
Range	Wing tip drop tanks.
	Fuel capacity 5000-plus lbs.
Altitude	Service ceiling 45-50,000'.
	Rate of climb 9000-plus fpm.
	Successor to FH1.
	Long nose can hold radar equipment.

F2H2N

	[Photograph AW, July 2, 1951, p. 17].
	Night fighter. Extensive radar gear.
Power	2 West. J-34.

F2H2N (cont.)

Speed	Well over 600 mph.
Range	Large capacity wing tanks.
Altitude	
Armament	4 20 mm. cannon.
	Launched by catapult.

F3D1

Designations	XF3D1.
Manufacturer	Douglas.
Name	Skynight.
	Two-seat, twin-jet, carrier-based, all-weather fighter.

F3D1

Power	2 Westinghouse J-34-WE-38.
	3600 lbs. s.t.
	J-34-WE-34.
Speed	600-plus mph.
Range	Normal 1500 miles.
Altitude	Service ceiling 45,000'-plus.
Armament	.20 mm. cannon.
	Crew 2.

F3D2

Deliveries will start soon.

New type G-3 autopilot.

227

F3H

Designations	F3H.
Manufacturer	McDonnell.
Name	Demon.
Power	West. J-40.
	8000-9000 lbs. s.t.
	First flight reported August 13.
	Swept-back wings. Needle-nose.

XF4D1

Manufacturer	Douglas.
	Elliptical delta wing. Photo [AA, February 19, 1951, p. 4].
Power	West. XJ-40.
	7500 lbs. thrust.

F4U

Designations	F4U4, F4U5.
Manufacturer	Chance-Vought.
Name	Corsair.

F4U4.

Power	P & W R-2800-18W.
	~~XXXXXX~~ 2100 hp.
	Water-injection.
Speed	Max. at sea level 379 mph.
	Cruising 227 mph.
	Stalling 110 mph.

F4U4 (cont.)

Range	1270 miles [AYB].
	Full capacity 234 gals.
	Two auxiliary tanks total 300 gals.
Altitude	Service ceiling 41,400'.
	Rate of climb 4340 fpm.
Armament	6 cal. .50 guns or 4 20 mm. cannon.
	8 5" rockets or 2 1000-lb. or 1600-lb. bombs.

F4UFE

As above with radar equipment.

F4U5N

F4U4 with special night-fighting equipment.

Power	1 P & W. 1900 hp.
Speed	Over 450 mph.
Altitude	More than 40,000'.
Armament	4 20 mm.

F4U5

Power	1 P & W R-2800-32W.
	2300 hp.
Speed	XXXXXXXXXXXXXXXXXXX
	Max. 470 mph. at 27,000'.
	410 knots.
	Cruising 156 knots.
Range	1500-plus miles. Fuel consumption 43 gals. per hour. Total fuel capacity (with auxiliary tanks) 534 gals.

"Could provide cover for 6 hours at a stretch." (Korea)

229

F4U5 (cont.)

Altitude	Service ceiling 42,500'.
	Rate of climb 4800 fpm.
Armament	4 20 mm. cannon and 8 5" rockets.
	2 Tiny Tim rockets.

F7F1

Designations	F7F3N, F7F4N.
Manufacturer	Grumman.
Name	Tigercat.
Power	2 P & W R-2800-22W.
	Hp. normal 2100, with water-injection 2800.
Speed	427 mph. at 19,000'.
Range	1015 miles.
Altitude	Service ceiling 36,000'.
	Initial rate of climb 4260 fpm.
	To 10,000' in 2.6 minutes, 20,000' in 6.2 minutes.
Armament	4 20 mm. cannon.
	Up to 4000 lbs. of bombs, rockets, etc.
	Used by Marine fighter squadron in Korea.

F7F4N

Folding wings. For carrier use.

F8F

Designations	F8F1.
Manufacturer	Grumman.
Name	Bearcat.

F8F1

Power	P & W R-2800-34W.
	2800 hp. for take-off (with water-injection).
	1700 normal.
	2210 hp. with water-injection at 10,000'.
Speed	Max. over 455 mph. 425 at sea level.
Range	Normal with drop tank 1650. Max. ferrying 2200.
	Fuel capacity (internal) 185. 2 wing tanks of 150 each.
Altitude	Service ceiling 42,300'. Rate of climb (water-injection) normal 5700 fpm.
Armament	4 cal. .50 wing-mounted guns.
	Bombs up to 2000 lbs. or 4 5" rockets.

F8F1B

F8F1 with 4 20 mm. cannon.

F8F2

Power	R-2800-E. 2500 hp.
Altitude	Has made a controlled climb from take-off to 10,000' in 92 seconds.

F6U1

Designation	F6U1.
Manufacturer	Chance-Vought.
Name	Pirate.
Power	1 Westinghouse J-34-WE-30A.
	Solas afterburner.
	Normal hp. 3000.
Speed	Max. 550 mph.

F6U1 (cont.)

Range	Jettisonable wing-tip tanks.
	Fuel capacity 700 gals.
Altitude	Service ceiling 38,000'-plus.
	Rate of climb 7800 fpm.

F7U1

Designations	F7U1, F7U2.
Manufacturer	Chance-Vought.
Name	Cutlass.
Power	2 Westinghouse J34-WE-32. 3000 Hp.
Speed	Max. 700-plus mph. at sea level.
	600 mph. at 50,000'.
Range	1000-plus miles.
Altitude	Rate of climb 10,000 fpm.

F7U2

	Production version.
Power	2 Westinghouse J-45.
	6000 lbs. s.t.
Speed	
Range	Drop tanks.

F7U3

Power	2 Westinghouse J-46.
	4800 lb. dry.
	6000 lb. with afterburner.
Speed	600-plus mph.

232

F7U3 (cont.)

Three have flown. Navy authorizes production.

One of the shortest rates of turn of any U.S. high-speed jet.

Navy will buy "substantial number."

F9F

Designations	F9F2, F9F3, F9F5.
Manufacturer	Grumman.
Name	Panther.
	Short take-off run for carrier operation, without catapult.

F9F2

Power	1 P & W J-42-P-2.
	5000 lbs. s.t.
	J-42-P-6.
	5000 lbs. s.t.
Speed	Max. 600-plus mph. at sea level.
Range	1200-plus miles.
Altitude	
Armament	4 20 mm cannon.
	6 5" rockets or 2 1000 lb. bombs.

F9F3.

Power	Allison J-33-A-8.
	4600 lb. s.t.
	5000 lb. s.t.
Speed	600-plus mph.

233

F9F5

Note	In large-scale production.
Power	1 P & W J-48
	or J-42
	or Allison J-33
	P & W J48-P-4.
	6250 lbs. s.t.
Speed	650 mph. at sea level.
	Probably 100 mph. slower than MIG15.

MF9F6

	Swept-wing Panther.
Manufacturer	Grumman.
Power	P & W 48.
	Supersonic in level flight.

XF10F1

	Swept-wing carrier fighter.
Manufacturer	Grumman.
Power	1 Westinghouse J-40.
	10,000 lb. s.t.
Speed	Max. 800 mph. at sea level.
	Grumman receives contract for F10F1 for service testing.

PB4Y2

Designations	PB4Y2
Manufacturer	Convair.
Name	Privateer.
Power	4 P & W R-1830-94 ~~XXXXX~~
	~~XXXXXXXXXXXX~~ 1200 hp. each.
Speed	Max. over 250 mph.
	Cruising over 200 mph.
	Stalling 93 mph.
Range	Max. over 3000 miles.
Altitude	
Bomb Load	6000 lbs. (bombs or depth-charges).
Armament	Nose-turret, 2 dorsal turrets, tail turret,
	two waist blisters, each equipped with cal. .50 guns.
	Crew 11.

PBM5

Designations	PBM5, PBM5A.
Manufacturer	Martin.
Name	Mariner.
	General purpose amphibian flying boat.
Power	(PBM5) 2 P & W R-2800-22.
	(5A) 2 P & W R-2800-34.
	max. 2100 hp. for take-off.
Speed	(5) Max. over 200 mph.
	Cruising 147 mph.
	Alighting 82 mph.
	(5A) Max. speed over [illegible] mph.

PBM5 (cont.)

Range	(5A)	Max. range 2300 miles.
		Fuel capacity 3000-plus gals.
Altitude	(5)	Service ceiling 20,200'.
		Initial rate of climb 588 fpm.
		Rate of climb 370 fpm.
Armament		6 cal. .50 guns (in turrets in nose and amidships).
Bomb Load		4000 lb. of bombs or depth-charges.

P2V

Designations	P2V1, P2V2, P2V3, P2V4.
Manufacturer	Lockheed.
Name	Neptune.
	Patrol bomber especially designed to hunt down "snorkel" subs.

P2V1

Power	2 Wright R-3350-8.
	2100 hp each.
	2300 hp. each for take-off.
Speed	
Range	P2V1 set record for distance in a straight line.
	11,235 miles. [1946]
Altitude	
Armament	2 flexible cal. .50 nose guns.
	Dorsal and tail turrets with 2 cal. .50 guns each.
	Crew 7.
Load	16,500 lb. bombs.

136

P2V2

Power	2 Wright R-3350-24W.
	each 2500 hp. for take-off (dry).
	" 2800 hp. for take-off (wet).
	" normal 2100 hp.
Armament	6 20 mm. cannon in nose.
	Corsal turret 2 cal. .50 guns. Tail turret 2 20 mm. cannon.

P2V3

Power	2 Wright R-3350-26W.
	each 2700 hp. for take-off (dry).
	" 3200 hp. for take-off (wet).
	" 2300 hp. normal, sea level to 1200'.
Speed	Over 300 mph level flight.
	Cruising 170 mph.
	Stalling (landing) at 45,000 lbs. 77 mph.
Range	Patrol load 3000-plus miles.
	Ferrying 4100-plus miles.
Altitude	Usable ceiling 23,200'.
Bomb Load	(in bomb bay) 800 lb. (torpedoes or depth charges).
Armament	1 ton of radar [WF, April, 1950].
	6 20 mm. cannon fixed in nose.
	2 cal. .50 flexible guns in top turret, 2 in power tail turret.
Remarks	7 place.

P2V3C

Adapted for carrier operation. JATO.

In 1949 took off from aircraft carrier. Flew 4,000 miles dropping bomb load of 10,000 lbs. at 2,000 mile point.

P2V4

Power	2 Wright R-3350-30W.
	each 3250 hp. for take-off (wet).
Speed	Max. 352 mph at 9500'.
Range	Normal fuel capacity 4210 gal.
	Wing-tip fuel tanks Normal range 4200 miles.
Altitude	Service ceiling 26,100'.
Armament	6 nose guns, rockets, depth charges.
	Crew 4-9.
Remarks	New submarine-detection equipment.

P2V5

[Photograph AA, May 14, 1951, p. 14.]

Power	Compound engines.
Range	Larger wing-tip tanks.
Armament	Nose turret with twin flexible 20 mm. cannon.
	Carries torpedoes.
	More radar and electronic equipment.

P2V6

Coming along on production line.

For mine-laying.

P4M1

Designation	P4M1.
Manufacturer	Martin.
Name	Mercator.

Long-range naval patrol aircraft.

P4M1 (cont.)

Power	2 P & W R-4360-20. 20W.
	2 Allison J-33-A-23.
	J-33-A10.
	P & W has 3250 hp. ~~XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX~~
	Allison - 4000 lbs.
Speed	~~XXX~~. over 350 mph. at 16,400'.
	Max. 395 mph. ~~XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX~~
	Cruising 200-plus at 15,000'.
Range	2000-plus ~~XXXXX~~ Max over 3000.
	Normal fuel capacity 4200 gals.
Altitude	Service ceiling 30,000'.
	High speed photo runs at 30,000'.
Load	
Armament	Nose, mid-upper and tail turrets.
	12,000 lbs. of mines, bombs, rockets, droppable gas tanks.
	Crew 9.

P5M1

Designations	P5M1.
Manufacturer	Martin.
Name	Marlin.
	Anti-submarine twin-engined flying boat.
	Development of PBM5. For anti-sub work.
Power	2 Wright R-3350-26-26.
	3250 hp.
Speed	Max. 270 mph.

P5M1 (cont.)

Armament	"Internal and external."
	Crew 7 or 9.
Remarks	Initial test flight reported July 2, 1951.

XP5Y1 (R3Y1)

Manufacturer	Convair.
	Weight 138000 lbs.
Power	4-engine turbo-prop seaplane.
	Allison T-40.
	(new model) 7500 lbs. s.t.
	Engines develop 5500 hp. a piece.
Speed	390 mph. [with old T-40 engines].
Range	5000 miles.
Load	To carry A-bomb ?
	Crew 12.
Remarks	Production order for 12 scheduled in 1952 funds. Will cost $6,967,900 each.

HUP1

Designations	HUP1.
Manufacturer	Piasecki.
	"Plane guard duty with carriers."
	"Compact enough to fit lift of smallest carrier."
Power	Continental R-975-34.
	525 hp.
Speed	Max. 130-plus mph.

HUP1 (cont.)

Crew 2.

Passengers 5 or 3 litters.

HRP

Designations	HRD, HRP2 (USAF H21).
Manufacturer	Piasecki.

HRP1

Power	1 P & W R-1340. 600 hp.
Speed	Max. 120 mph.
Capacity	Crew 2. Passengers 8. 6 litters.
	Rescue 8 people within 300 miles.

HRP2

Higher cruising speeds and generally better performance.

HO4S

Designations	HO4S1.
Manufacturer	Sikorsky.
Power	1 P & W R-1340. S3H2.
	550 hp. at 5000'.
	600 hp. for take-off.
	Crew 2. Passengers 10, or 8 litters.

HO3S

Designations	HO3S1 (USAF H5).

HO3S (cont.)

Manufacturer	Sikorsky
Power	1 P & W R-985. 450 hp.
	Crew 1 and 3 passengers.
	Deliveries complete.

HTL

Designations	HTL1, HTL2, HTL3.
Manufacturer	Bell.
Power	1 Franklin 6V4-178-B32. 178 hp.
Capacity	Three total.

D-558-1

Designations	D-558-1.
Manufacturer	Douglas.
Name	Skyrocket.
	High-speed research aircraft.
Power	1 Allison J33-4-23.
Speed	Max. 650.606 mph. Mach. .87.
	Min. speed (light) 130, (heavy) 150.
Range	Fuel capacity 230 gals. plus 2 50-gal. wing tanks.
	1500 lbs.
Altitude	Absolute ceiling 49,500'.
	Max. climb 7500 fpm.

D-558-2

Manufacturer	Douglas.
Name	Skyrocket.
	D-558-1 with swept-back wings and supplementary rocket power-plant.
	Three built. [J50]
Power	Westinghouse 24C (J-34).
	Plus Reaction Motors rocket motor.
Speed	Mach. 1.5. V-max. TAS. 1000 mph.
	Min. speed light 131, heavy 180.
Range	250 gals. for jet [J50]. 1500
	3000 lbs. for rocket [J50].
Altitude	Ceiling for V-max. 55,000'.
	Absolute ceiling 67,000'.
	Max. climb 25,000 fpm.
	Reached over 63,000' on flight.

243

APPENDIX B

Navy Aircraft Inventory and Production

Operating A/C	1949	1950	1951	Programed (Before Korea)
Navy & Marine Corps	8,035	5,598	4,389	
Navy & Marine Corps Reserves	2,678	2,185	1,844	
Totals	10,713	7,783	6,233	

Delivery Schedules

1 July 1949-30 June 1950	997
1 July 1950-30 June 1951	945 (Before Korea)
1 July 1949-30 June 1951	1942

Production Estimates

Calendar 1950	1026
Calendar Jan. - Aug. 1951	931
	1957

Operating A/C, 1 Sept. 1951: Regular Navy and Marine Corps Planes

Operating Programed 1951	4,389
Add: Production	1,931 (1)
	6,320

(1) 1950: 1000
1951 [1 Sept.] 931
Total: 1931

Operating A/C, 1 Sept. 1951: Total

Navy & Marine Corps	6,320
Navy & Marine Corps Reserves (Programed)	1,844
Total	8,164(1)

The 997 A/C scheduled for delivery during the fiscal year 1949/50 has been added to the number of operating A/C programed for 1951. It is possible that they were included in the programed estimate for 1951; if so, a fraction, perhaps 50% (500 a/c) should be deducted thereby reducing the total of Navy-Marine operating A/C to 6,147 and the total, including Navy and Marine Corps Reserve operating a/c to about 8,000. In Aug. 1950, the Navy estimated an increase of 1,102 a/c for fiscal year 1950/51, giving a total of 5,491 Operating A/C (which may be the more accurate figure) and a total with Reserves of 7,335 A/C. However, in view of the Korean situation, it seems unlikely that all the planes scheduled for retirement in fiscal year 1950/51 were retired. The AF scheduled B-29s for retirement 1 July 1951 but are still using them in Korea in quantity. Also, the Navy demothballed, July-December, 1950, 907 combat a/c.

The estimate of 8,491 a/c including the Reserves falls between the estimates given 16 April 1951 to the H. R. Appropriations Committee of 8,161 a/c as of June 30, 1951 and 8,739 a/c projected for June 30, 1952. If the 316 a/c added for July-Aug. 1951 production are subtracted, the remainder for 30 June 1951 of 8,185 is very close to the Navy's expectation

(1) A cross-check using delivery schedules produces the following figures:

Operating A/C Programmed 1951	4,389
Schedules for Delivery 1 July 1949-30 June 1951	1,942
July-Aug. 1951 Production	316
Total	6,647
Navy & Marine Corps Reserves (Programed 1951)	1,844
	8,491

of 8,161.

In addition, the Navy had 3,200 a/c described as non-operational and in storage on 30 Dec. 1950.

Production of Navy Aircraft by Types: 1 Jan. 1950-1 Sept. 1951

(Note: 4/5 of a/c on fiscal year 1950/51 procurement to be jet-fighters and 1/5 patrol a/c for ASW. (Adm. Sherman at House Hearings, 27 April, 1950)

Lack of time and available data have prevented making a complete table of estimates by types. The following may be noted:

Fighters

F3D	84	
F4U-5	120	
F9F	600	(Jan. 1949-Sept. 1951)
FH1	60	
F2H	200	
F6U	33	

Attack Planes

AD2	232	(plus 215 in 1949 and 900 AD before 1949)
AF2	50	
AJ	55	
AM	149	

Patrol Bombers

P2V	278	
P2V-4	30	
P4M	19	
P5M	25	
PBM5A	36	
XP5Y1	12	on order @ $6,967,900 each on 1951/52 appropriations
HUP	35	

Bibliographical Note

A. Naval and Air Manuals

1. James C. Fahey, The Ships and Aircraft of the U. S. Fleet (6th ed., 1950). This work has been justly called "the spy's handbook." Containing the list of all vessels on the Navy Register as of 1 January, 1950 and giving the fleet status (active or reserve, Atlantic or Pacific) of all combatant ships, it furnishes the ideal point of departure for the investigator. The aircraft section is less useful but is still of great value. All but the newest types of aircraft are listed and considerable information regarding their use by particular squadrons is found in the descriptive passages. Ship conversion and construction programs are described, and armament and performance data seem to be accurate.

2. Jane's Fighting Ships 1950-51 (1950). Jane's was used principally to supplement Fahey, as it contained certain items which were more up-to-date.

3. Jane's All the World's Aircraft 1949-50 and 1950-51 (1949, 1950). This was used as the basic source for aircraft performance.

4. Brassey's Annual 1948, 1949, 1950. Except for certain excellent general articles this work furnished little information.

B. Official Government Publications

1. Congressional Hearings. For this report were used the hearings before Senate Armed Services Committee (81-2, and 82-1), and the Senate and House Appropriations Committees (81-2, and 82-1). Of these extremely useful hearings the last proved the most

valuable. The personnel strength of the Navy and Marine Corps is categorically given, as are the numbers of ships in commission and about to be activated. The total number of aircraft is shown, though no breakdown by type is given. The number of air groups and squadrons may also be obtained from the hearings, as well as much information regarding the status of fleet and air bases. Precise data on weapons is less easy to obtain, but even when the discussion is put off the record, certain implications can be drawn and at the very least furnish valuable leads for further investigation. The hearings also contain general statements by high-ranking naval officers which prove useful in evaluating the development of new weapons and equipment.

2. U. S. Naval Institute Proceedings (1950, 1951). Only occasionally is new information gleaned from this periodical, but it contains useful articles (such as one describing the launching of a guided missile from a submarine) and recapitulations of ship construction and conversion programs which are helpful as guides.

3. U. S. Department of Commerce, Airman's Guide, vol. 6, no. 8. From this manual was obtained the list of naval air stations and facilities in the United States.

C. Service Journals

1. The Army-Navy-Air Force Journal. This publication (read 1 July, 1950 - 25 August, 1951) is of the utmost value. Perhaps its most useful feature is its publication of Navy and Marine Corps orders, and the suspension of this service between 12 August, 1950 and 9 June, 1951 was a serious handicap to the investigator. From orders one can [illegible] and

re-converted ships, and the existence of various commands. Heavy Attack Wing ONE, for example, was first noticed in orders, and fleet and air bases may also be identified. Movements of ships and air units are not revealed in published orders but there are numerous news items which give this information. While it is true that ships entering the Korean war zone were not mentioned, the record of their departures is extremely useful in calculating the size and deployment of the fleets, particularly when the ships of a destroyer division are moved and the division and its destination are identified. As the Journal naturally concentrates on news of interest to Army, Navy, and Air Force Officers its news stories are an admirable check on items which might have been missed or misunderstood in the public print. Even the social column is of value, for here one sometimes learns the existence and location of commands through the names of commanding officers.

2. The Army-Navy-Air Force Register. This publication is almost identical with the Journal, but there are enough items found in it alone to justify study.

3. Naval Aviation News. This publication, read from 1 January, 1950 through August 1951, is a mine of information. It reveals the existence of air groups and squadrons, their location and mission (usually with a long time-lag), the movements of carriers, and a mass of background information on naval aviation. From N.A.N. one may learn the types of planes flown by various squadrons; something about the elusive subject of weapons; significant

data on tactics and operational practices. The activities of Reserve squadrons, a subject outside the scope of this study, are particularly well covered.

4. All Hands. Less technical than Naval Aviation News, All Hands, read from January 1950 to July 1951, reveals the existence and location of ships, again with the same time lag observed in the aviation magazine.

5. Ordnance. This publication is less revealing than one might expect. From it, however, a technical ordnance expert can pick up numerous leads, and for this study it was the major source of information on weapons.

D. Daily Newspapers.

1. The New York Times. This paper was read from 1 May, 1951 to date. The remarks concerning The Times in the bibliographical note appended to the Army section of this report generally apply to the Navy, except for the value of communiqués. Since the Navy names ships and task forces, its communiqués are extremely valuable. Air units are not usually mentioned; in fact only once, when on 24 August CAG5 was reported back in combat aboard the Essex, was a unit named. Types of planes in combat, however, are named.

2. The New York Herald Tribune. See the bibliographical note appended to the Army section of this report.

3. The New Haven Register. See the bibliographical note appended to the Army section of this report.

4. Stars and Stripes (European and Pacific editions). These periodicals, so valuable for the Army, are practically worthless for the Navy.

E. Periodicals.

1. News Magazines. Time, Newsweek and U. S. News and World Report have been read. Except for "background articles" (which must be used with caution) little of value was found.

2. Popular Magazines. The Saturday Evening Post (January 1950 to date) and Colliers (July 1950-July 1951) were consulted, but found practically worthless. Popular Science, however, proved more substantial, particularly in the field of weapons. Flying yielded a few items.

3. Trade Journals. The only trade journal which yielded any significant information was Aviation Week, which provided useful data on naval aircraft in production, results of tests, and characteristics of planes now in use.

F. Books on World War II.

Knowing from other sources the extent to which the Navy is provided with World War II equipment, we were able to make good use of historical material. The Morison naval history series afforded much data on weapons, detection equipment, and their use. The same type of information can be gleaned from the series entitled Science in World War II, particularly the volume edited by J. E. Burchard, Rockets, Guns, and Targets.

SECTION IV

THE UNITED STATES AIR FORCE

It is impossible to compute the time and number of lives saved by Tactical Air Power in the last war. Ask any doughboy what he thinks. He will tell you that there was never a more welcome sight than the tactical fighters and bombers ranging overhead, clearing the way for him.

The Air Officer's Guide, 1950, p. 35.

THE UNITED STATES AIR FORCE

Table of Contents

AIR FORCE

APPENDIX

LIST OF CHARTS

256

SUBSECTION I

MISSION

257

I. MISSION OF THE AIR FORCE

There are four major objectives, the fulfillment of which constitutes the mission of the Air Force.

The first and most important objective is the maintenance of capability of delivering atomic bombs against any aggressor. General Vandenberg states that "the amount of atomic delivery capability which is sufficient to deter aggression and which we can maintain is our most serious and fundamental problem." The well-publicized emphasis which the Air Force has given to long-range bombing is an indication of the paramount importance attached to this objective.

The second objective is the adequate defense of this hemisphere against air attack, through the use of day-fighters, night-fighters, (i.e., all-weather-fighters), and a radar defense warning screen. In the future this objective will also be pursued through the use of ground-to-air guided missiles. Although this objective is to be attained partly through strong defense, it is also to be achieved through the fulfillment of the first objective, for "the most tenable means to prevent large numbers of atomic bombs from dropping on this country is to retaliate by destroying these weapons and the means for their delivery at their source." [Vandenberg]

The third objective is to continue to "develop a greater capability to perform the Air Force role in unified operations," i.e., to provide tactical air support of all surface forces both Army and Navy.

The final major objective is to fulfill commitments to allies in the North Atlantic Treaty organization. For the Air Force, this means responsibility for the leading role in providing what is needed to deny to enemy airpower the air space under which Allied ground forces might operate. Further, such

ground forces must be supported continuously in their operations. Ability to fulfill this obligation will be particularly critical during the next few years.

* * * * * *

The critical importance of the Air Force in the U.S. over-all national defense is evident from the extent to which the entire strategy has hinged upon the capacity of Strategic Air Command to destroy Soviet industry by atomic bombardment.

In relation to the other armed services, the position of the Air Force is this: In naval strength, American and British fleets already control the seas, or at least the surface of the seas; for ground strength, the Allies must rely heavily on the forces of the European countries; but in air power, it is the responsibility of the United States, far more than of any ally, to maintain superiority over the Russians both in strategic delivery of atom bombs and in tactical support of ground forces. General Vandenberg maintains that the Air Force "is the single potential that has kept the balance of power in our favor," and that "it is the one thing that has, up to date, kept the Russians from deciding to go to war."

SUBSECTION II

AIR ORDER OF BATTLE

260

A

OVER-ALL SUMMARY:

Organization, Strength, Composition, Deployment, and Combat Value of the Air Force.

TABLE I

SECRETARIES, DEPARTMENT OF THE AIR FORCE, AND PRINCIPAL COMMANDERS, USAF.
(as of 10 August, 1951)

THE SECRETARIES

Thomas K. Finletter	Secretary of the Air Force
John A. McCone	Under Secretary of the Air Force
Eugene M. Zukert	Assistant Secretary of the Air Force (Management)
Roswell L. Gilpatric	Assistant Secretary of the Air Force (Procurement)

PRINCIPAL COMMANDERS AND STAFF OFFICERS

Chief of Staff	Gen. Hoyt S. Vandenberg
Vice Chief of Staff	Gen. Nathan F. Twining
Assistant Vice Chief of Staff	Maj. Gen. William F. McKee
Deputy Chief of Staff, Operations	Lt. Gen. Thomas D. White
Deputy Chief of Staff, Comptroller	Lt. Gen. Charles B. Stone
Deputy Chief of Staff, Matériel	Lt. Gen. O. R. Cook
Deputy Chief of Staff, Matériel (Acting)	Maj. Gen. Carl A. Brandt
Deputy Chief of Staff, Personnel	Maj. Gen. R. E. Nugent
Deputy Chief of Staff, Development	Maj. Gen. Donald A. Putt
The Inspector General	Lt. Gen. Howard A. Craig
Special Assistant to C/S for Reserve Forces	Maj. Gen. Earl S. Hoag
The Judge Advocate General	Maj. Gen. Reginald C. Harmon
The Surgeon General	Maj. Gen. Harry G. Armstrong
Chief, Air Force Chaplains	Maj. Gen. Charles I. Carpenter
Director of Public Relations	Brig. Gen. Sory Smith

MAJOR ZI COMMANDS	COMMANDING GENERALS
Air University	Lt. Gen. Idwal H. Edwards
Air Defense Command	Lt. Gen. B. W. Chidlaw
Air Matériel Command	[illegible]

262

Strategic Air Command	Lt. Gen. Curtis E. LeMay
Continental Air Command	Maj. Gen. Willis H. Hale
Military Air Transport Service	Maj. Gen. Laurence S. Kuter
Air Training Command	Maj. Gen. Robert W. Harper
Tactical Air Command	Lt. Gen. J. K. Cannon
Air Proving Ground	Maj. Gen. Bryant L. Boatner
Special Weapons Command	Brig. Gen. John S. Mills
Headquarters Command	Brig. Gen. Morris J. Lee
Air Research and Development Command	Lt. Gen. Earle E. Partridge
USAF Security Service	Brig. Gen. Roy H. Lynn

OVERSEAS COMMANDS	COMMANDING GENERALS
Far East Air Forces	Lt. Gen. Otto P. Weyland
U. S. Air Forces in Europe	Lt. Gen. Lauris Norstad
Northeast Air Command	Maj. Gen. Lyman C. Whitten
Alaskan Air Command	Maj. Gen. Wm. D. Old
Caribbean Air Command	Brig. Gen. Emil C. Kiel

OFFICERS ON SPECIAL ASSIGNMENTS

Chairman, Dept. of Defense Management Committee	Gen. Joseph T. McNarney
Acting Commander in Chief, U. S. Air Forces in Europe	Lt. Gen. John K. Cannon
Commander, Joint Task Force Three	Lt. Gen. Elwood R. Quesada
Senior Air Force Member Military Staff Comm., United Nations	Lt. Gen. Hubert R. Harmon
Commander in Chief, Alaskan Command	Lt. Gen. William E. Kepner
Commander in Chief, U. S. Northeast Command	Maj. Gen. Lyman P. Whitten

263

OVERALL ORGANIZATION

The Department of the Air Force was created as an executive department in the National Military Establishment under the provisions of the National Security Act of 26 July 1947. The same act established the United States Air Force under the Department of the Air Force. Both Department and Air Force began to function officially on 18 September 1947. The USAF is composed of the Regular Air Force, the Air Reserve, the Air National Guard, and the Air Reserve Officers Training Corps.

Civilian Administrative Organization. The Secretary of the Air Force, Thomas K. Finletter, is head of the Department and is responsible for all matters pertaining to its operation, as well as for the execution of duties prescribed by law or assigned by the President and the Secretary of Defense. Subordinate to him are one Under Secretary (John A. McCone), who is deputy to the Secretary and who shares with him responsibility for the general supervision and operation of the Department, one Assistant Secretary (Management) (Eugene M. Zuckert), responsible for policies relating to organization and management of the Department, including budgetary affairs, fiscal affairs, cost control, manpower, contract financing, civilian components, and civilian-military personnel arrangements, and one Assistant Secretary (Matériel) (Roswell L. Gilpatric), responsible for policies relating to procurement and matériel programs, production, mobilization, supply, maintenance, transportation, industrial security, command-installations, real estate, contract renegotiation, and contract appeals.

Further elaboration of the Administrative Organization is shown in Chart I.

264

Military Organization: Staff. The Chief of Staff, USAF, General Hoyt S. Vandenberg, commands all components of the Air Force, and is responsible to the Secretary of the Air Force for the readiness of all components and for the operation of the Air Force. He is principal advisor to the President and the Secretary of the Air Force on the employment of the Air Force.

The Vice Chief of Staff, General Nathan F. Twining, assists the Chief and in his absence performs his functions.

The Assistant Vice Chief of Staff, Major General William F. McKee, is responsible for administrative procedures and coordination within the Air Staff.

There are five Deputy Chiefs of Staff, responsible for 1) development of budgetary and fiscal programs, 2) administration and management of all military and civilian personnel, 3) scientific and technological development in the fields of aircraft, weapons, and new devices, 4) Intelligence, Operations, and Plans, and 5) programs in the field of Matériel and services (see Chart II, Headquarters, U.S. Air Force, and Table I). This system of deputies was set up in 1947 as a substitute for the traditional military organization (A-1 Personnel, A-2 Intelligence, etc.).

Also directly responsible to the Chief of Staff are the Surgeon-General, the Inspector General, the Judge Advocate General, a Special Assistant to the Chief of Staff for the Reserve Forces, the Director of Public Relations, and the Air Board, which has both civilian and military members, and which assists in the formulation of overall air policies (see Chart I).

Further elaboration of the headquarters organization is shown in Charts II and III

Military Organization: Commands. All activities and all units of the USAF within the United States are assigned to one of twelve commands,

which are divided according to function. These commands, which are diagrammed in Charts II and IV and will be analyzed more fully below, are 1) Air University, 2) Air Proving Ground, 3) Strategic Air Command, 4) Continental Air Command, 5) Air Training Command, 6) Tactical Air Command, 7) Special Weapons Command, 8) Military Air Transport Service, 9) Air Defense Command, 10) Air Matériel Command, 11) Air Research and Development Command, and 12) Headquarters Command. The commanding officers of these commands are shown in Table I.

Overseas Commands. The twelve commands listed above are all functional commands, and their jurisdiction has no relation to geography or the area of operations. In the case of units which are assigned outside the United States, however, such units are placed in one of five overseas commands, namely 1) United States Air Forces in Europe, 2) Caribbean Air Command, 3) Far East Air Forces, 4) Alaskan Air Command, and 5) Northeast Air Command. These commands are diagrammed in Charts II and V and their commanding officers are shown in Table I.

From the above statement, it will be clear that units stationed overseas are subject to a dualism of command. Their function places them in one of the twelve general commands and their theatre of service places them under the commanding officer of the theatre command within which they operate. For instance, the 20th Air Force, containing B-29 bomber groups stationed at Okinawa, is part of the Strategic Air Command and is also part of Far East Air Forces.

WING AND OTHER UNIT ORGANIZATION

As recently as 1950, the group was the standard unit of Air Force organization and the standard measure of Air Force strength, but it has now been superseded by a more inclusive unit, the wing. The wing includes not only the combat air group, but also the support elements which make possible

the movement of a group to overseas areas for operation. Thus the wing would contain, in addition to its combat units, a maintenance and supply group, an air base group, and a station medical group. Formerly a wing included three combat squadrons, but with the growing size of the wing it is now expected to include four. Although the wing is at present the basic organizational unit, the Air Force also maintains a limited number of squadrons which are not operatively attached to any wing. (See diagram of Wing organization in Chart VI.)

At present, the combat mobile portion of a heavy bomber wing contains about 3,500 military personnel and about 30 planes. For a medium bomber wing, the corresponding figures are 3,000 personnel and 35 planes plus, in some cases, as many as 20 tanker planes; for a fighter wing, 2,000 personnel and 75 planes; for a troop carrier wing, 1,500 personnel and 48 planes.

The exact structure of a wing may be understood from the following analysis of the wing set-up planned for the B-47 when it comes into operation. The wing will contain:

a) One combat group, consisting of three bombing squadrons and one refuelling squadron. Each bombing squadron is to have 15 B-47s, and the refuelling squadron will have 20 tankers, either B-29s or C-97As. The total group strength will be 1600 officers and airmen.

b) One maintenance and supply group, consisting of a maintenance squadron (300 men), a supply squadron (400 men) and a motor vehicle squadron (250 men). Total, 950 personnel.

c) One Air Base group, consisting of a headquarters squadron (100 men), a communications squadron (100 men), an air police squadron (130 men), a food service squadron (200 men), and an installation squadron (160 men). Total, 690 personnel.

d) One medical group, containing a personnel of 120.

The wing in question, then, will contain in sum 3 bombing squadrons, one refuelling squadron, 3 maintenance and supply squadrons, 5 air base squadrons, and a medical group; and its total personnel will be 3,360.

All comparisons between Air Force units and Ground Force units are pointless because of the well-known fact that the ratio of services of supply and other supporting agents to combat elements is entirely different in the cases of ground forces and air forces. For instance, it has required 1480 military personnel to keep a force of 310 aircrewmen, assigned to 30 B-50s, effectively operative.

THE 95 WING FORCE

In the two years, 1950-1951, the Air Force has been undergoing two major transformations simultaneously. One of these is the conversion from piston-powered aircraft to jet-powered craft, which will be discussed below. The other is the expansion from a 48 wing force to a force of 95 wings.

This expansion began immediately after the outbreak of the Korean War and was authorized in three steps, by which increases were ordered, first from 48 to 58 wings, then from 58 to 68, and most recently from 68 to 95 wings. Current proposals by Senator Lodge for a 150 wing program foreshadow a continued expansion, and the Air Force itself appears committed to further growth by the statement of General Vandenberg that the 95 wing force cannot be expected to perform both its offensive and defensive functions and "to absorb the creeping wastage of peripheral warfare." It has been reported unofficially that the formal request of the Air Force, later this year, will be for 138 combat wings.

In terms of actual growth in fulfillment of the mandate to expand, the Air Force has increased from 48 to 87 wings in the year ending 30 June 1951. The rapidity of this wing growth has been made possible by the availability,

in 1950, of a number of Air National Guard and Air Force Reserve units. In September, 1950, the Air Force called two Reserve wings, of which one was a medium troop carrier and the other was a light bomb wing; in October, it called five ANG wings, consisting of four fighter bomber and one tactical reconnaissance wing; in November, it called two additional medium troop carrier wings from the Reserve. During the first six months of 1951, it called twenty-two additional wings (among these were 5 on February 1, 6 on March 1, and 6 on April 1). Altogether, a total of twenty-one ANG and ten AFR wings had been called to active service by June 30, 1951. Meanwhile the Air Force activated ten additional regular wings, so that the present 87 wing force consists of 46 wings in being prior to June 30, 1950,(1) 10 regular wings activated within the last year, 21 ANG wings, and 10 AFR wings.

Actual increase in strength, however, has not been proportionate to increase in the number of wings, for the Reserve and Guard wings were considerably below strength. They were initially almost at strength in officer personnel, but very much under strength in airmen personnel. When they were brought to service, they had to be provided at once with filler personnel from other existing units of the Air Force and from the training command to build them up to an effective strength. Even with these changes, it was still true in July, 1951, that in some cases they were only 60 to 70 percent of authorized strength, and were posted at separate installations where it was necessary to keep them until collective housing and facilities could be provided.

As the AFR and ANG potential is utilized, the capacity for rapid

---

1. Theoretically, there were 48 regular wings as of June 30, 1950, but the Air Force was known to be 5,000 men below strength, and two of the wings were apparently dispersed or merged with others, for the total of regular wings is now only 56, although 10 new ones have been activated.

expansion diminishes, and it is expected that only eight more wings (probably all regular wings) will be added in the fiscal year 1951-52. These additions will be spaced at fairly uniform intervals over the year.

As a measure of increase in strength, the term wing is deceptive for the size and character of the wing has been altered. The new wing is a combat-ready wing, and as such, will have a full four-squadron strength, instead of the three squadrons of peacetime. This explains the otherwise confusing fact that while the Air Force needed only 502,000 men for its earlier 70-group program, it now needs 1,061,000, or more than twice as many, to man a force nominally only a third larger. Furthermore there is now reportedly a change in Air Force parlance, by which the term "combat wing" has been restricted to fighter and bomber wings, and no longer includes troop carrier wings (some fifteen of them). This means that a future request for 138 "combat wings" would in reality mark an increase of some 63 to 68 units, over the present 95 wing quota, for it would not include the 20 to 25 troop carrier wings which would certainly be part of the Air Force program.

The composition of the present 87 wing force has not been revealed, but 78 of the wings have been identified in the present study. Of these, 26 are bomber wings, not all of which are under Strategic Air Command (5 strategic reconnaissance, 3 heavy bomber, 15 medium bomber, 3 light bomber); 38 are fighter wings, not all of which are under Tactical Air Command 4 tactical reconnaissance, 6 fighter escort, 11 fighter bomber, 14 fighter interceptor, and 3 fighter all-weather; and 14 are troop carrier wings. These wings are itemized below in the more detailed analyses of SAC, TAC, ADC, USAFE, FEAF, and the Alaskan and Caribbean Air Commands.

For wing distribution by commands, perhaps the best available indication is <u>Aviation Daily's</u> estimate, for the 95 wing force, that 40 will be Strategic, 30 Tactical, and 20 Air Defense

STRENGTH

The strength of the AF depends upon aircraft, personnel, bases, supply, and their coordination.

Aircraft

Any estimate of the number and quality of the aircraft depends upon the criteria used. Even the total inventory in August 1951 of 13,500 planes of all types (a drastic reduction from the 22,000 aircraft of July 1949 and Symington's expectation [March 1950] of 21,000 on 1 July 1951) gives a false and over-optimistic impression of the AF's combat forces in-being. Of the 13,500, probably 8,500 consist of non-combat types and technically "obsolete" aircraft (B-26s, B-29s, F-47s, F-51s) and about 5,000 (at most) first-line, "modern" (built since 1 July 1948) combat types. The true strength of AF capabilities should be in terms of first-line combat craft -- 4,742 (the total combat aircraft by types) to 5,000 (rough estimate of combat aircraft based on over-all production figures). Included are 677 bombers (plus 200 B-29 tankers) of which there are 153 B-36s (including 60 RB-36s [?]), 100 B-47s, 200 B-45s, and 222 B-50s. Not included are 1,000-1,500 B-29s, 1,000 of which were "in storage" and many of which have been withdrawn and renovated or converted to RB-29s and KB-29s, and an unestimated number of B-26s. About 4,000 (3,923) fighters (F-80, F-82, F-84, F-86, F-89, F-94, and F-95) are not yet obsolete (3-year life) and may be considered first-line and available 1 September 1951.

In types of aircraft, the AF is under equipped in first-line bombers, only 677 available for a T.O. & E. requirement of 1023 [-1077] for the 26 Bomber Wings identified as "in-being." The deficiency is made up with B-29s and B-26s, both technically defined as obsolete as of 1 July 1951, but active in August in Korea. The current concentration upon the production of B-47 and

and B-57A models may bring the 26 Bomber Wings up to full complement by July 1952.

In fighter strength, the 3,923 aircraft (after deducting losses and 500 [?] F-80s made before 1948) exceeds the 2,862 aircraft prescribed for the 39 Fighter Wings identified; but this number does not provide even a 2-1 ratio of first-line aircraft to allow for spares, over-hauling, and operational losses.

The Troop Carrier and Transport aircraft in-being, if the estimate 1,046 is correct, seems more adequate. The 13 Troop Carrier Wings require 468 [-624] aircraft (whether 36 or 48 aircraft to each Wing), but the number 1,046 Transport aircraft includes Cargo aircraft, of which MATS has 4 Wings (not herein included in the 78 Wings identified) requiring 144-192 aircraft. Even when the MATS aircraft requirement is added (a total of 612-816), an ample number of Transports is available and no recourse to the 1223 U.S. Commercial Airline Fleet in service 31 December 1950 (the 1914 Paris Taxicabs for the AF) seems as yet necessary. However, 547 aircraft are old models (C-54, C-74, C-82) and only 507 (C-97, C-119, C-124) are modern. For paratroopers, 236 C-119s are available as first-line carriers.

In sum, with the possible exception of Transport aircraft, the strength of the AF, for the 78 Combat Wings identified, is marginal at best. Projected against the 87 Wing AF alleged to be "in-being," the discrepency between aircraft required and aircraft available becomes even greater. In quantity of aircraft, the AF does not appear to have sufficient capabilities to warrant an attack upon an enemy air force of the same (78 Wing) size in full complement.

Potentially, however, the current rate of aircraft production (and Wilson's optimism abouta 70-80% "rise" during July-December 1951) is significant. If the estimate of 3,162 aircraft (all services) of which the AF's share is

 272

probably 2,000 aircraft or more) is correct, then much of the deficiency (at least in Fighters) may be overcome by 1 January 1952. However, Wilson's optimism of 16 August is hard to reconcile with the July statement from his office that "production of military aircraft had fallen over 20% behind schedule." In any event, it will probably not be until 1 July 1952 when 8,322 aircraft ought to be produced during FY 1951-52 that the alleged 87 Wing Air Force will be adequately equipped. As for the 95 Wing Air Force (the present goal) Secretary Finletter, himself, stated recently that when the 95 Wings are in-being in July 1952, they will not be fully equipped.

The popular estimate of 3,000 military aircraft produced during Calendar 1950 (stemming from the Aircraft Industries Association) seems high - 2600 to 2800 aircraft seems a more conservative figure. Numerous and various bottle-necks (tooling in particular) are admitted; and they presumably affect unevenly the estimates on the different types of aircraft tabulated below. Even if 3,000 aircraft were built in Calendar 1950, and, if the 4,990 aircraft predicted for Calendar 1951 materialize, both the total and the production rate per month will fall far short of Truman's stated goals. The estimate presented below calls for 666 aircraft per month in December 1951, in contrast to the A.I.A.'s prediction of 750 (9,000 aircraft per year) for December 1951. Without minimizing the tremendous potential of the U.S. aircraft industry (now reinforced by General Motors at Kansas City (F-84s) and Kaiser-Frazer Factories at Willow Run (C-119s) the conclusion cannot be avoided that AF equipment in planes required for a first-line 95 Wing (to say nothing of a 150 Wing) air force remains "on order" rather than "in-being." The so-called "obsolete" F-51s, B-26s, and B-29s have been a match for the Chinese to date; more than a match for the North Koreans; but until July 1952, the AF does not seem to be of strength in equipment, at least quantitatively, sufficient to undertake an

aggressive war against a first-line air force of 87 or more fully equipped Combat Wings.

However, the current low rate of aircraft production, compared to the 96,000 military aircraft built in 1944, is a conscious part of Defense Mobilization policy. This policy stresses potential ability to produce more than the actual production of military requirements. For the Air Force, this highly rational policy offers the advantage of avoiding the "freezing" of aircraft type-models until the latest possible date before entering upon hostilities (as happened prematurely to the late German air force); on the other hand, it prevents having an air force of war strength in peace time which an aggressor nation ought to have at the moment it undertakes an offensive war. (Does this substantiate the USAF's claim to be a Defensive Weapon, and that it's second line of defense is Strategic, retaliatory bombing of enemy supply dumps and production centers?)

Defensively, the policy of developing production potential towards Truman's goal of a 50,000-aircraft-per-year rate, involves a calculated risk - that the aircraft factories (including essential component parts) survive the initial onslaught by an attacking air force of bombers and that the USAF in-being is adequate to provide protection for nearly a year before truly "full" production can be attained. Such a defensive air force seems the immediate goal, and even this seems unlikely to be attained before the spring or summer of 1952. The current program envisages a peak annual production of from 18,000 to 20,000 aircraft during 1953/54 (1,500-1,600 aircraft per month) and then a tapering off to 12,000-14,400 (1,000-1,200 aircraft per month) thereafter. The year 1953/54, then, is the period when the USAF will be set to enter upon an all-out aggressive war.

Another factor, however, is the alleged ability of B-50s and B-29s,

as well as B-36s and B-47s (and perhaps Fighter-Bombers) to deliver Atomic Bombs (now presumed to be of several sizes). The stockpile of Atomic Bombs, herein estimated at 1500 (600-2400) bombs of standard (Hiroshima) size, seems to warrant journalists' loose assertion that two A-bombs are now more expendable than the 475 (plus B-29s) planes capable of delivering them. The development of smaller bombs (using less plutonium) may mean that the upper figure, 2400 units, is closer to the actual number of atomic bombs which, on 20 August (after our estimate was made) the Alsops (N.Y. Tribune, p. 17) declared might be multiplied "by a secret but certainly very significant figure."

Supply

Supply, other than aircraft, for the Air Force has not been investigated for this report. However, the estimate of U.S. capabilities in Chemical Warfare indicates a plentiful supply of petroleum products available in the Western Hemisphere. Metals provide a limitation upon production on a scale comparable to that of 1944 (96,000 military aircraft) according to Vandenberg; and not until 1953 will production of nickel, for example, be able to meet expected military needs. As against Military Requirements, the U.S. annual Production Capacity is estimated at 20% for steel ingots, 25% for aluminum, and 12% for copper. (For details of other metal shortages see Chemical Warfare, Part IX, C-2-b.)

Composition of AF Wings by Type of Aircraft

Bombers

Wings	Type of A/C
Heavy	B-36
Medium	B-29, B-47, B-50
Light	B-26, B-45

Fighters

Wings	Type of A/C
Day Fighters	F-47, F-51, F-80, F-84, F-86
All-Weather	F-82, F-89, F-94

Reconnaissance

Wings	Type of A/C
Strategic	RB-29, RB-36, RB-47, RB-50
Tactical	RB-26, RB-45, RF-47, RF-51

Troop Carrier

Wings	Type of A/C
Heavy	C-54, C-74, C-97, C-124
Medium	C-46, C-47, C-82, C-119

216

STRENGTH: PERSONNEL

Air Force strength as of June 30, 1951, stood at 787,000 consisting of 106,500 officers and warrant officers and 687,500 airmen. This total represented an increase from 411,277 in June 30, 1950 (57,000 officers and 354,000 airmen), which means that personnel strength was increased by 49,500 officers and 333,000 airmen in the period of a year. Nevertheless, this total was 63,000 under the goal for fiscal 1951, which was 850,000. The reasons for this deficiency will be discussed under Airmen. Under the 95 wing program, personnel strength is expected to rise 1,061,000 by the end of fiscal 1952, and this force will consist of 136,000 officers and 925,000 airmen.

In addition, the Air Force employed 251,999 civilians as of June 30, 1951, and the projected number for June 30, 1952, is 319,547.

a) Officers. The officer corps of the Air Force at present consists predominantly of Reserve and Air National Guard officers whose service is, at least legally, involuntary. By 30 June 1952, it is estimated, in fact, that there will be approximately 23,000 Regular and 113,000 non-Regular officers. Of these non-Regulars, 74,000 will be from the Organized Reserve, and Air National Guard, and as such are legally liable for 24 months service, though the Air Force has announced that it will release them after 21 months; 39,000 will be from the Unorganized or Volunteer Reserve, which is liable for 17 months service. The fact that so large a proportion of officers, now on involuntary service, will be elegible to retire after a short term of service presents a considerable problem. The Air Force is relying on its ability to induce Reserve and Guard officers voluntarily to remain beyond their required terms of service. At the same time, the supply of officers is to be kept up by increasing the ROTC program and the OCS production in order to reduce the demands on the present reservists, a large proportion of whom are veterans of World War II. A total of 6,875 AROTC students were scheduled to graduate during the fiscal 1951, all of whom were commissioned and ordered to extended active duty, and 9,282 commissioned graduates are expected during fiscal 1952. Also, the Air Force receives 25% of the graduates from West Point

and Annapolis, but this provides only some 350 officers per annum.

b) Airmen. In fiscal 1952, the Air Force plans to build its supply of airmen from a strength of 680,500 to a strength of 925,000. At the same time that it is making this increase, it must also find replacements for 125,000 men whose service expires or is terminated, and it will require a total procurement of 370,000 for the year, or 30,800 per month, to attain the desired strength.

For its supply of airmen, the Air Force has depended primarily upon a system of voluntary four-year enlistments. The June 30 total of 680,500 airmen consisted of 601,000 such enlistees, plus 52,800 from the Organized Reserve and Air National Guard and 26,700 from the Volunteer Reserve. The calling up of reserves is, for the present, virtually complete, and only about 7,800 Reservists will be called in fiscal 1952, which means that the burden of procurement falls almost completely upon enlistments.

Prior to March, 1951, the growth of the Air Force was not restricted by enlistments, but by "the extremely limited mobilization base or capacity of the Air Force in terms of housing and facilities." The low capacity of the basic training camps made it necessary to control the personnel input very carefully. Early in 1951, enlistments so far outran capacity that during January acceptance of recruits was halted in some areas and restricted in others. But in the spring, enlistment declined sharply, falling to 16,000 in April and 14,000 in May. In June it rose to 24,000 and in late June and early July was running at the rate of 1500 per day, but the increase came so late that as of June 30, the Air Force was 63,000 men short of the strength planned at that time. The system of four-year enlistment is so advantageous in terms of effectiveness and economy that the Air Force is "exerting every effort to remain on an enlistment basis" but it has been officially stated that, "we shall not hesitate to resort to the draft if it becomes necessary."

The average age of the airmen recruited in fiscal 1951 was twenty years, and the Air Force placed considerable value upon their stamina, eagerness, and mental alertness.

Another significant factor about the personnel is the high proportion which is intensively trained. The Air Force estimates that more than 50% of its enlisted personnel requires at least six months of technical training, and this does not include higher skills in maintenance, radar mechanics, and electronics.

c) Distribution of Personnel by Activity. The following figures show the numbers of officers and men assigned to each of the principal activities of the Air Force, as of June 30, 1951.

Directly associated with combat wings	227,000
Assigned to combat services	94,000
In training	197,000
Air transport	63,000
Station maintenance and security	55,000
Air Depot support	39,000
Radar and Air Defense	39,000
Assigned to command administration at headquarters above wing level	24,000
Research and Development	16,000
Transients, patients, prisoners	31,500

d) Personnel Overseas. Before Korea it was expected that 111,000 officers and airmen would be overseas (including Alaska) by June 30, 1951. But on May 19, 1951, the Department of Defense released the information that one-third of the Air Force Personnel was outside the country. This was about 253,000. By contrast with this figure of one-third, it is interesting that the Air Force

estimates that only about one-fourth of its personnel (265,000 out of 1,061,000) will be overseas by June 30, 1952. It seems unlikely that both the May 19 figure and the figure for 1952 are correct, for they would indicate that while the total personnel of the Air Force is increasing by 34%, the personnel overseas will be increasing only 4.7%. This is entirely inconsistent with the heavy emphasis on overseas bases for the coming year (see Strength: Installations and Bases), and there seems to be no possible basis for reconciling the two figures, unless calculations were based on an assumption that the Korean War would be terminated.

The Civilian employees of the Air Force numbered 223,799 in the Zone of the Interior, and 28,200 overseas as of 30 June 1951. They are expected to number 274,703, interior, and 44,844, overseas, at the end of the present fiscal year.

STRENGTH: INSTALLATIONS AND BASES

The Concept of an "Active Major Installation." Air Force figures on bases are rendered ambiguous by two factors: 1) an installation does not necessarily include an air field, for warehouses, laboratories, basic indoctrination centers, etc., are installations. 2) Air Force officials distinguish between active major installations and total installations - for instance, an auxiliary field attached to a regular Air Force base is probably not a "major" installation. Frequently, numbers of installations are mentioned without indication of which type is intended.

The important problem in this connection, however, is not merely the uncertainty as to whether a given base is "major" or "non-major." It is in the fact that the Air Force has quietly changed its concept of an active major installation, apparently in somewhat the same way that it has changed and is changing its concept of a wing (see above). The term remains undefined and the reason for the change in meaning cannot be explained except by drawing inferences, but it is possible that the Air Force raises its standards for an active major installation or for a wing in order that it may increase its strength at a steeper rate than is apparent when it presents to Congress its requests for additional wings or additional installations.

In February, 1950, the Air Force testified that it would have 169 active major installations for its 48 wing force as of 30 June 1950 (81st Congress, 2nd Session, House, Appropriations Committee Hearings, Dept. of Defense, Pt. 3, p. 1550); in April 1951, the Budget, in asking for 215 active major installations as of 30 June 1952, declared that this would be an increase of 115 over those active two years previously, which is equivalent to saying that there were 100 active major installations as of 30 June 1950 (Budget for the Military Functions of the Department of Defense for the Fiscal Year 1952,

p. 121). The anonomaly is further indicated by the Air Force statement in February, 1950, that it would operate a 48-wing force as of 30 June 1951 on 154 active major installations, and its statement at present that it is operating an 87-wing force on only 160 active major installations - despite the fact that at least 50 Air Force bases are known to have been activated since the Korean War began.

Bases and Installations at Present. Secretary Finletter declared on 5 July 1951 that the base structure is "the weakest of the three pillars of the Air Force," the other two pillars being planes and trained personnel. The deficiency of overseas stations may have been primary in causing him to make this statement, as is suggested by the recent announcement of new bases in North Africa and of negotiation for new bases in Spain, as well as by the known plan to concentrate on overseas bases in fiscal 1951-52. It is believed that USAF bases in Bavaria would be quickly overrun if the Russians moved against Western Europe.

But there is another consideration which accentuates the deficiency of bases. This is the fact that jet planes need runways of 10,000 or 12,000 feet and they need heavy-duty landing strips, whereas the longest runways for propeller-driven planes of World War II were about 8,000 feet, with pavement too light for the planes of today. Jets also need larger and more rapid re-fuelling systems. The high-performance base today is a complex community with extensive and varied facilities and is very unlike many of the World War II bases with their temporary equipment.

The Air Force was operating 160 active major installations and 232 total bases as of 30 June 1951, according to its own count, and is building to totals of 215 and 309 by the end of fiscal year 1951-52. The present study has identified 212 Air Force Bases and other air fields at which the Air Force

operates within the United States, and 56 overseas. From this total of 268, it would appear that the term base, as used by the Air Force in its count of 232, does not include all fields at which the Air Force operates; perhaps municipal fields where the Air Force shares facilities, and auxiliary fields attached to Air Force Bases are not included.

The build-up of bases during fiscal year 1950-51 was primarily in the Zone of the Interior, and emphasis was laid upon the creation of training facilities. It is said that a total of 47 "major active installations" will be required to support the training program for the 95 wing force, as compared with 21 for the 48 wing force. Furthermore, of 48 new or reactivated bases planned in December, 1950, 34 were to be in the United States and only 14 overseas.

For the coming year, however, the build-up will be primarily overseas. The Air Force plan, to increase from its present 160 active major installations to 215 by 30 June 1952, will involve the deactivation of 8 bases, and the activation of 63, for a net increase of 55. (The 8 bases to be deactivated are part of a group of at least 39 bases which were activated on an interim basis when ANG squadrons and AFR units were called up in recent months. Many of them were not suitable for normal use, and were put into operation only on an emergency basis, and a considerable number have already been deactivated.) Of the 63 bases to be activated, only 15 will be in the United States and 48 will be overseas.

For fuller detail on bases, command to which assigned, length of runways, etc., see the appended Tables in Subsection IV showing 1) List of Air Force Airfields in the United States, 2) List of Air Force Airfields overseas, and 3) List of Air Bases to be Activated in the United States during fiscal year 1951-52.

For the fiscal year 1951-52, the Air Force is to have 32 depots and allied installations (see AMC)

operates within the United States, and 56 overseas. From this total of 268, it would appear that the term base, as used by the Air Force in its count of 232, does not include all fields at which the Air Force operates; perhaps municipal fields where the Air Force shares facilities, and auxiliary fields attached to Air Force Bases are not included.

The build-up of bases during fiscal year 1950-51 was primarily in the Zone of the Interior, and emphasis was laid upon the creation of training facilities. It is said that a total of 47 "major active installations" will be required to support the training program for the 95 wing force, as compared with 21 for the 48 wing force. Furthermore, of 48 new or reactivated bases planned in December, 1950, 34 were to be in the United States and only 14 overseas.

For the coming year, however, the build-up will be primarily overseas. The Air Force plan, to increase from its present 160 active major installations to 215 by 30 June 1952, will involve the deactivation of 8 bases, and the activation of 63, for a net increase of 55. (The 8 bases to be deactivated are part of a group of at least 39 bases which were activated on an interim basis when ANG squadrons and AFR units were called up in recent months. Many of them were not suitable for normal use, and were put into operation only on an emergency basis, and a considerable number have already been deactivated.) Of the 63 bases to be activated, only 15 will be in the United States and 48 will be overseas.

For fuller detail on bases, command to which assigned, length of runways, etc., see the appended Tables in Subsection IV showing 1) List of Air Force Airfields in the United States, 2) List of Air Force Airfields overseas, and 3) List of Air Bases to be Activated in the United States during fiscal year 1951-52.

For the fiscal year 1951-52, the Air Force is to have 32 depots and allied installations (AMC)

7. DEPLOYMENT

As noted above, AF strength on 1 July 1951 consisted of 87 wings of which 78 have been identified in this study.

Strategic wings comprise 30 of these 78. Nine of these are in SAC's 8th AF and are based at Carswell AFB, Walker AFB, Forbes AFB, Lake Charles AFB, Bergstrom AFB, Biggs, AFB, Rapid City (South Dakota), and Davis-Monthan AFB. Eight are in SAC's 15th AF and are based at March AFB, Travis AFB, Fairchild AFB, Castle AFB, and George AFB. Seven are in SAC's 2nd AF and are based at Barksdale AFB, McDill AFB, Hunter AFB, Turner AFB, and Ramey AFB (Puerto Rico). Another wing is at Lockbourne AFB. Four wings, temporarily detached from service in the preceding Air Forces and therefore not to be added to their total, are in USAFE's 3rd AF, based in Great Britain. Three wings are in FEAF's 20th AF, based on Okinawa, and one fighter-escort is in FEAF's 5th AF

Tactical wings comprise 31 of these 78. Eight of these and part of a ninth are in TAC's 9th AF and are based at Pope AFB, Langley AFB, Shaw AFB, Clovis AFB, George AFB, and Memphis Municipal Apt. Nine are in TAC's 18th (Troop Carrier) AF and are based at Donaldson AFB, Miami International Apt., Memphis Municipal Apt., Sewart AFB, Bergstrom AFB, Mitchell AFB, and one squadron is known to be at Alexandria (Louisiana). Eight and part of a ninth are in FEAF's 5th AF which is largely tactical, and which also contains three fighter-interceptor wings and one fighter-escort wing additionally. Four are in USAFE's 12th AF, based at Wiesbaden, Landsberg, Furstenfeldruck, Neuberg, Rhein-Main, and Erding in Germany. One is under Caribbean Air Command.

Air Defense wings comprise 17 of these 78. Thirteen of these wings, all fighter-interceptors, are under ADC, six in the Eastern Defense Force, three in Central, and four in Western. Also three fighter-interceptor units are under the command of FEAF and one is under Alaskan Air Command. Of the

three all-weather wings, one is at McGuire AFB, one at Selfridge AFB, and one at McChord AFB.

Considered functionally, deployment follows:

Five strategic reconnaissance wings: one in SAC's 8th AF, two in its 15th AF; one in its 2nd AF; one at Lockbourne AFB, Air Force unidentified.

Three heavy bomber wings: two in SAC's 8th AF; one in its 15th AF. Also the 43rd Recon. Wg. in 8th AF is heavy.

Fifteen medium bomber wings: four in SAC's 8th AF; four in its 15th AF; four in its 2nd AF; three in FEAF's 20th AF. Three wings, either unidentified, or from the above fifteen, are on rotational duty in USAFE's 3rd AF.

Three light bomber wings: one in TAC's 9th AF; one in FEAF's 5th AF; one with its squadrons divided between the 9th and the 5th.

*Four tactical reconnaissance wings: two in TAC's 9th AF; two in FEAF's 5th AF.

*Six fighter escort wings: two in SAC's 8th AF; one in its 15th AF; two in its 2nd AF; one in FEAF's 20th AF.

*Eleven fighter bomber wings: four in TAC's 9th AF; four in FEAF's 5th AF; two in USAFE's 12th AF; one in Caribbean Air Command.

*Seventeen fighter interceptor wings including three all-weather wings: six in ADC's Eastern Defense Force; three in its Central; and four in its Western; three in FEAF's 5th AF; one in Alaskan Air Command.

*Fourteen troop carrier wings: nine in TAC's 18th AF; two in FEAF's 5th AF; and three in USAFE's 12th AF.

The 78 wings in question are explicitly identified in the sections dealing with the various commands.

* These figures diverge slightly from figures in Subsection III, Aircraft, A Inventory, Table I, but the differential does not alter the calculations there, for differential figures above and in that table add up to the same totals of wings using Jets, F-82, and F-51 aircraft.

Combat Value.

Strategic capabilities. The two-fold mission of strategic aviation -- retaliatory bombing in any location on the globe, alleged to be a defensive measure, and long-range reconnaissance over land and sea depends primarily upon the quality of the B-36 and the B-47. The AF considers the B-36 a disappointment; the B-47 they believe to be the "world's greatest" bomber. The B-36, however, remains the sole type of a/c capable of inter-continental missions from the Z.I. and return. Recently acquired overseas bases and those projected in Spain, if tenable under attack, should make of the B-47 a superior strategic weapon.

At present, the military value of strategic bombing is a subject under debate within the AF itself, with the other Armed Services, and the civil government. Regardless of the policy decision ultimately taken, the AF has the capability to carry out strategic bombing with its 93 B-36s and perhaps 100 B-47s; also, for shorter ranges, B-29s and B-45s are able to deliver the standard (Hiroshima) atomic bomb and presumably the new smaller models. The current stockpile of Atomic Bombs is estimated (Part VII below) at 1500 (600-2400) units of standard size or perhaps a greater number (the 2400 maximum) of smaller versions. Recourse to atomic bombs may offset the recent discounting of the effectiveness of strategic bombing in Germany during W. W. II because of the atomic bomb's far greater destructive force. Whether the waste in the destruction of non-military materials and civilians offsets the atomic bomb's greater efficiency in destroying military objectives seems a moral-political, more than a military question.

An additional factor in estimating the strategic capability is the new electronic devices (Part VI below) said to enable bombers to be guided

accurately to within 50-100 feet of the target. If the principle of strategic bombing of armament factories, supply depots, railroads, and military installations, is accepted as militarily efficient, then the AF seems prepared and moderately well-equipped to conduct this type of warfare.

However, until the B-36s and B-47s are challenged in actual combat by first-line enemy fighters, it will be impossible to judge whether they actually are capable of getting over a far distant target - and beating their way home to safety. Anti-aircraft guided missiles are an additional - and untested - hazard for the bombers. The estimated 677 bombers (excluding the B-29) does not provide the AF leeway for a high (50) percentage of losses in the initial stages of a war.

The same risks (enemy fighters and guided missiles) apply to strategic reconnaissance bombers, notably the RB-36, again the only intercontinental type. Unless fighter escort is provided from overseas bases, possibility of losses seems great. In their photographic equipment, notably the K-48 camera of which 2,283 units are on procurement for 8 types of bomber and for the RF-80, the strategic reconnaissance planes are of high quality though apparently limited in number. Probably strategic reconnaissance and strategic bombing would be most effective in the early stages of a war, before the enemy had learned, through actual combat, how to cope with the several advantages the new high altitudes, speeds, and mechanical devices are reputed to afford.

Tactical Capabilities. Gen. Wolfinberger, at Southern Pines, 23 August 1951, redefined the tactical mission and divided it into 4 objectives:

1) to achieve air superiority over the enemy;

2) to bomb enemy supply lines and concentrations behind the front;

3) to provide close ground support within 1,000 yards of the ground front lines; and

4) air defense (perhaps 3d in order of priority).

This declaration of function draws sharply the issues raised between Army, Navy and Marines (who declined to participate in the Southern Pines Exercises) and within the AF itself. New atomic weapons - anti-personnel bombs (Aviation Daily, 27 Aug. 1951) - suggest a revolution in function and combat value of tactical aviation. Vandenberg spoke (26 Aug.) about "retardation" of the battlefield, or destruction of large enemy forces by tactical a/c carrying atomic weapons.

The basic issue in the inter-service controversy, which remains a disruptive force, is control. Wolfinberger and the AF advocate the present system of cooperation and coordination between the separate Army and AF commands, instead of the Army's preference, operational control of all close-support planes by Army and Corps commanders. The success of the Marine Air Wing in Korea is cited in support of the Army contention. But the other 3 aspects of the tactical aviation mission suggest that the AF takes a more comprehensive view of the role of air power in military tactics.

The anticipated use of atomic weapons by tactical air forces also changes its position vis-à-vis strategic aviation which alone has heretofore been identified with atomic warfare. However, the present combat value of tactical aviation depends upon the number and quality of both a/c and pilots. Unless the "new" atomic bombs are reduced to about 1,000 lbs. in weight (a size which fighter a/c can carry), its tactical use will be limited to light bombers of which the AF is especially short in number

until the B-57A, the British Canberra being made by Martin, is produced in mass. Only when a substantial number of light bombers are available will the new tactical objectives be realizable in force.

Still short of a total number of fighter a/c and pilots equal to that of a first-rate enemy air force, the total effectiveness of U. S. tactical aviation seems inferior to the high quality of the AF's seasoned pilots and best a/c. Asst. Sec'y of Defense Lovett states that the F-86 theoretically is the equivalent of Russia's MIG-15, and actual combat experience in Korea confirms this generalization. However, some writers consider that the superior airmanship of U. S. pilots against the Chinese is what offsets the MIG's slight technical advantages. Perhaps the current installation in the F-84F of the British Sapphire jet engine, developed by Armstrong-Sidely and now being produced by Wright Aeronautical Corp. and Buick Div. of General Motors, may create a balance in favor of this fighter.

Even though the inventory of first-line fighters exceeds numerically present wing requirements, plus 15% needed for spares, the margin is less than 2-1, and the combat value of tactical aviation, until "more perfect" jets and an array of light bombers are available, does not now [1 Sept. 1951] seem to warrant entering upon war against a first-rate airforce of the same wing size. However, when the AF has enough a/c capable of applying atomic weapons to tactical warfare, a revolution in ground warfare may occur. A large-scale, mass ground force offensive, such as China has tried and is anticipated if Russia tries to "over-run" Europe with manpower, might be arrested. In such event, the importance of tactical aviation would be enhanced, and a decline in the relative value of retaliatory and strategic bombing expected. This might even withdraw modern warfare from Hitlerian "total war" against civilians and restore it to the professional armies and their b[...]

Air Defense Capabilities. The Air Defense Command's mission is to provide for the defense of the U.S.; to organize, administer, equip, train, and prepare for combat the units and combat crews of the AF assigned or attached; and to carry out joint air defense training and exercises. The objective of the fighter aircraft defense is to ward off enemy attacks, or to contain enemy a/c, for which purposes component units are located at strategic bases throughout the Z.I. Sixteen Wings, of the 79 identified, belong to ADC, and these include 3 All-Weather Fighter Wings, and 13 fighter interceptors, 75 a/c per wing, 1200 a/c in all. The specific types of a/c actually assigned to the ADC Wings have not been ascertained, except in 3 instances:

52d. Fighter All-Weather, McGuire AFB, N.J.: F-94s

325th. Fighter All-Weather, McChord AFB, Washington, to guard Hanford Atomic Reactors: F-94s

115th Fighter-Interceptor, Scott AFB, Illinois: F-51s.

The 95 Wing AF, according to Aviation Daily, will assign to Air Defense 20 Wings with, presumably, a prescribed total of 1500 a/c as against the current 1200.

Air Defense capability depends upon 1) the quantity of high quality fighter a/c, and 2) the ability to get the planes into the air in time to ward off or to curtain enemy attackers. Successful defense involves 3 elements: an efficient aircraft warning and control system; fighter-interceptor a/c with a high rate of climb capable of engaging the enemy before he approaches the target; and anti-aircraft to put up a barrage over vital areas. To effect an efficient interlocking of these components requires an intricate system of communications able to transmit messages without interruption.

The Aircraft Control and Warning System consists of 1) a Radar Screen (for the efficiency of which see Part VI) and a Ground Observer Corps. On 2 March 1951 Secretary Finletter said that the construction of the Radar Screen will be reasonably complete for the continental U. S. during 1951, but that the Alaskan Radar "will follow along next year." Radar installations are to be located at 26 airports in the Z.I., and others will be established at Annette Island, Fairbanks, Alaska, and Honolulu.

The Ground Observer Corps requires 500,000 civilian volunteers (of which 400,000 were still needed in April 1951) in addition to 12 "groups" of regular AF troops and 3 ANG outfits numbering 25,000 AF Radarmen manning 97% of the system. Volunteers are assigned to the East and West Coasts, the Great Lakes, the North Central, and the Southeastern Areas of the U.S. Observation posts numbered, in April, 8,000 with an additional 11,400 programed and 24 new filter centers to be added to the 26 then in operation. The function of the ground observers is to compensate for the "line-of-sight" limitation of the radar stations.

The Filter Centers are located in cities (a vulnerable location) providing good telephone connections; while the observation posts are located approximately 8 miles apart and will be staffed by a minimum of 25 civilian volunteers on duty 2 hours each a day. A Filter Center has 5 officers and 10 airmen on duty to provide training, but it will be operated by the 500 volunteers assigned thereto.

The procedure is for the observer to telephone an "Aircraft Flash" call to his filter center; there several observers' data are plotted on grid maps and telephoned to a Ground Control Interceptor Unit of the ADC.

Filter Centers set up by November 1, 1950 are:

Bangor, Maine
Manchester, New Hampshire
New Haven, Connecticut
Syracuse, New York
Albany, New York
White Plains, New York
Buffalo, New York
Trenton, New Jersey
Baltimore, Maryland
Harrisburg, Pennsylvania
Pittsburgh, Pennsylvania
Richmond, Virginia
Canton, Ohio
Columbus, Ohio
Grand Rapids, Michigan
South Bend, Indiana
Chicago, Illinois
Green Bay, Wisconsin
Minneapolis, Minnesota
Seattle, Washington
Spokane, Washington
Portland, Oregon
Oakland, California
Pasadena, California
Santa Ana, California

Filter Centers set up between November 1, 1950 and July 1, 1951 are:

Roanoke, Virginia
Raleigh, North Carolina
Charlotte, North Carolina
Atlanta, Georgia
Savannah, Georgia
Jacksonville, Florida
Miami, Florida
Knoxville, Tennessee
Nashville, Tennessee
Lexington, Kentucky
Louisville, Kentucky
Springfield, Illinois
Des Moines, Iowa
Omaha, Nebraska
North Platte, Nebraska
Bismark, North Dakota
Fargo, North Dakota
Rapid City, South Dakota
Sioux Falls, South Dakota
Casper, Wyoming
Helena, Montana
Billings, Montana
Boise, Idaho
Sacramento, California

Secretary Finletter expressed doubt about the adequacy and effectiveness of the Aircraft Control and Warning System; and popular writers exhibit an even greater skepticism. Despite the Radar Screen, the elaborate system of filter centers, excellent telephonic communications, and the Ground Observer Corps, there is grave doubt whether swift-flying enemy a/c can be reported rapidly enough to enable Defense a/c to ward them off the target. Once off the ground, the F-94, with which the 3 All-Weather Fighter Wings are equipped, has a 7,350 f.p.m. rate of climb which should provide first-line fighter defense. Each of the Eastern, Central, and Western Air Defense Forces has one such wing.

It may be remarked that U. S. fighter-interceptors are all equipped primarily for atmospheric, rather than stratospheric, operations and that a high altitude jet interceptor is badly needed. Also the problem of gaining altitude rapidly enough to intercept an enemy at 40,000 or 50,000 feet makes the potentialities of guided missiles applicable to air defense capabilities.

During the June 1951 air defense exercise of the Aircraft Control and Warning System involving 210,000 civilian volunteers, mock enemy bombers "pierced the nation's air defenses during the first 24 hours," and the exercise disclosed many weaknesses in the system.

B

MAJOR COMMANDS:

Zone of the Interior

294

STRATEGIC AIR COMMAND

Hq. - Offut AFB, Omaha, Nebraska.

CG. - Lt. Gen. Curtis E. LeMay.

SAC is responsible for the conduct of operations in any part of the World, at any time, either independently or in co-operation with land or naval forces. It is equipped with long-range bombers, reconnaissance and fighter aircraft, to permit global air operations. Its organization includes three Air Forces in the United States, and numerous units assigned temporarily to the overseas commands (q. v.).

Three wings of SAC have been equipped with the B-36 heavy bomber, and a fourth is being converted to B-36s, if the plans explained by General Vandenberg in March, 1950, to the Senate Appropriations Committee, have been fulfilled. The wings involved are probably the 7th, 97th, 43rd, and 92nd Bomb. Wings. The strength of these wings is uncertain, somewhere between 18 and 30 planes per wing, probably nearer the lower figure.

The remaining wings of SAC which we have identified are each probably equipped with about 45 B-29s or B-50s. No B-47 units have yet been identified as such, but the 306th Bomb. Wing and the 301st Bomb. Wing may be jet units.

SAC has units operating with the 20th Air Force in FEAF and with the 3rd Air Force in England. A new interim base has been established at Rabat, French Morocco, where there is an airstrip but not an operational base, and at least five major North African bases are under construction. Eighteen B-29s and 6 F-80s have already been sent to North Africa and 1,000 airmen have arrived to man Novasseur Air Field. The Headquarters for the 5th Air Div. is at Rabat, commanded by Maj. Gen. Archie J. Old, Jr.

295

A new technique of radar bombing has made it possible for the B-29s of FEAF to give close tactical support to ground forces.

For further information pertinent to SAC, see other sections and tables of this study as follows: 1) statement of strategic capability, 2) statement on strength in terms of aircraft, showing estimated bomber strength, 3) statement and tables on aircraft performance, including bomber performance, and 4) tables of bases, showing which bases this study has identified as SAC bases.

8th Air Force. Hq., Carswell AFB, Fort Worth, Texas.
CG. Maj. Gen Samuel Anderson.

19th Air Div., Hq., Carswell AFB.

7th Bomb Wg., Carswell AFB.
B-36s. Complete with all its service groups.

3903 RBS Gp., also at Carswell AFB.

509th Bomb. Wg., Walker AFB, Roswell, N. Mex.
CO, Col. William H. Blanchard.

21st Air Div., Hq., Forbes AFB, Topeka, Kan.
CG., Brig. Gen. David Hutchinson.

90th Bomb. Wg., Forbes AFB.
CO, Col. Conrad F. Necrason.

44th Bomb. Wg. moving from March AFB, Cal., to Lake Charles AFB, La., during August and September, 1951.
CO, Col. Carlos J. Cochrane.
44th Bomb Gp.
66th Bomb Sq.
67th Bomb Sq.
68th Bomb Sq.
44th Field Maintenance Sq.
4109th Organizational Maintenance Sq.
4109th Armament and Electronics Maintenance Sq.

42nd Air Div., Hq. Bergstrom AFB, Austin, Texas.

27th Fighter Wg., Bergstrom AFB.
Spent first six months of 1951 on temporary duty in Korea.

 296

12th Fighter Escort Wg., Bergstrom AFB.
CO, Col. C. F. Swinson.
F-84s.
Now in the United Kingdom for training.

Division Number not identified.

97th Bomb. Wg., Briggs AFB, El Paso, Texas.
CO, Col. H. C. Doeney.
B-36s.
Has complete complement of service groups, including an aerial refueling squadron of KB 29s.

28th Strategic Recon. Wg., Rapid City, S. Dak.
RB-36s.

43rd Bomb. Wg. (Med.), Davis-Monthan AFB, Arizona.
B-50s.
This wing made first non-stop round-the-world flight.

15th Air Force, Hq., March AFB, San Francisco, Calif.
CG., Maj. Gen. Emmett O'Donnell.
Dep. CG, Brig. Gen. James E. Briggs.
The 15th AF contains 2 wings of B-50s, 3 of B-29s, and 2 which are being converted from B-29s to B-36s. One of these converted units will be a bomb. wg. and the other a strategic recon. wg. The 15th will have, and perhaps now has, two fighter wings of its own.

12th Air Div., Hq., March AFB, Calif.
CG., Brig. Gen. Wiley D. Ganey.

22nd Bomb. Wg., March AFB.
Has had training in England.

106th Bomb. Wg., March AFB.

5th Strategic Recon. Wg., Travis AFB, Calif.
B-36s.
Includes 1st and 23 Strat. Recon. Sqdns.

9th Bomb. Wg., Travis AFB, Calif.

57th Air Div., Hq., Fairchild AFB, Washington.
CG, Brig. Gen. C. J. Bondley, Jr.

92nd Bomb. Wg. (Med.), Fairchild AFB
CO, Col. Kenneth B. Hobson.
At present, this unit is being converted from B-29s to B-36s.

111th Strat. Recon. Wg., Fairchild AFB.
Now being equipped with B-29s.
Formerly a Pennsylvania National Guard unit.

 297

93rd Bomb. Wg., Castle AFB, Cal.
The identification of this wing is not certain.

131st Fighter-Bomber Wg., George AFB, Calif.
This is an ANG unit. Since its assignment to the 15th AF it may have been designated a Fighter-Escort Wg.

2nd Air Force, Hq. Barksdale AFB, La.
CG., Maj. Gen. Joseph H. Atkinson.
Dep. CG., Brig. Gen. Fay R. Upthegrove.
The 2nd Air Force has been designated to receive B-47 wings as they are formed.

47th Air Div., Hq., Barksdale AFB, La.
CO, Brig. Gen. Henry K. Mooney.

301st Bomb. Wg., Barksdale AFB.

376th Bomb. Wg. (Med.), Barksdale AFB.

6th Air Div., Hq. McDill AFB, Fla.
CG, Maj. Gen. Frank A. Armstrong.

306th Bomb. Wg., McDill AFB.
(Army, Navy, Air Force Journal, 28 July, 1951, p. 1366, lists a 305th Bomb. Wg. which is probably an error for 306th.)

2nd Bomb. Wg. (Med.), Hq., Hunter AFB, Ga., but now in England for training.
CO, Col. John C. Jennison, Jr.
96th Bomb. Sqdn.

108th Fighter Wg., Turner AFB, Ga.

31st Fighter Escort Wg., Turner AFB, Ga.
Recently returned from 6 months training (early in 1951) in United Kingdom.

55th Strat. Recon. Wg., Ramey AFB, Puerto Rico.

Air Force Number not Identified.

91st Strategic Recon. Wg., Lockbourne AFB, Ohio.

2. TACTICAL AIR COMMAND

TAC is charged with training and operating air units which assist ground and sea forces in gaining military objectives. It is equipped with light bombardment, fighter, and troop carrier aircraft. In addition to the two air forces - the 9th and the 18th - which it operates in the United States, TAC also has a number of units assigned to the overseas command (q.v.).

The 9th AF contains nine wings identified in this study, of which two are light bomber, two tactical reconnaissance and five fighter bomber (one light bomber on temporary duty in Korea). The 18th AF also contains eight identified wings, all of which are troop carrier.

Among overseas commands, the 12th AF, with headquarters at Wiesbaden, is a tactical force containing two fighter bomber wings and three troop carrier wings. In the Far East, the 5th AF is largely tactical, and it contains two light bomber wings, four fighter bombers, one tactical reconnaissance wing, and two troop carrier wings, as well as three fighter interceptor wings.

TAC may assume a more important role in future operations now that the atom bomb has been developed in such a way that it can be used against ground forces in battle (see discussion of tactical capabilities). Another factor likely to enhance the position of TAC is the development of troop transports which, it is said, "are capable of landing in any open field suitable for a paratroop drop, with weapons and other equipment too delicate to be parachuted." These have been publicly mentioned as going to the "Troop Carrier Command," which would probably mean the 18th Air Force.

About 400 aircraft from the 18th and 9th Air Forces were scheduled to participate in the air-ground maneuvers called Exercise Southern Pines during August 1951. This will be similar to the simulated airborne attack called Exercise Swarmer of last year, but on an even larger scale. From the 9th Air

Force, the 20th, the 123rd, the 137th, and the 140th Fighter-Bomber Wings, the 47th Light Bomber Wing, and the 118th Tactical Reconnaissance Wing were expected to be engaged; and from the 18th Air Force, the 314th, the 375th, the 434th, the 435th, the 443rd, and the 516th troop carrier wings were to be included (Army, Navy Air Force Register, 14 July, p. 3).

To achieve as effective air-ground coordination as possible, TAC has started an Air-Ground Operations School at Southern Pine, North Carolina, for training personnel from all the services in coordinated operations. One hundred and twenty-five students are now attending, and the facilities will be developed to handle some 6,000 students a year. Col. William M. Gross commands this activity. Another means of strengthening coordination is the development of a mobile unit of TAC called the Joint Air-Ground Instruction Team (JAGIT), which is now touring Army and Air Force installations giving instruction in coordinated tactical operations.

For further information pertinent to TAC, see other sections and tables of this study as follows: 1) statement of tactical capability, 2) statement on strength in terms of aircraft, showing estimated light bomber, fighter, and troop carrier aircraft, 3) statement and tables on aircraft performance, and 4) tables of bases, showing which bases this study has identified as TAC bases.

Hq. Langley AFB, Virginia.

CG. Lt. Gen. John K. Cannon.

9th Air Force, Hq., Pope AFB, North Carolina.

CG. W. K. Wolfinbarger.

47th Bomb. Wg. (Light), Langley AFB, Virginia.
47th M. & S. Gp.
4400th Combat Crew Train. Gp.
122nd Bomb. Sqdn. (Light)
117th Bomb. Sqdn. (Light)

300

4400th Maintenance Sqdn.
4400th Recon. Crew Train. Sqdn.
4400th Bomb. Crew Train. Sqdn.

3rd Bomb. Wg. (Light), Langley AFB, Virginia.
Two sqdns. of this wing are B-45s, two are B-26s. The two B-26 sqdns. are on temporary service in Korea.

140th Fighter-Bomb. Wg., Clovis AFB, New Mexico.
Moving from Buckley NAS, Colorado.
120th Fighter-Bomb. Sqdn.
187th Fighter-Bomb. Sqdn.
191st Fighter-Bomb. Sqdn.
Consists of former National Guard Units.

Tactical Air Div., Provisional, Hq., Shaw AFB, South Carolina.

CO., Col. P. K. Morrill

20th Fighter Bomber Wg., Shaw AFB.
Note: The 20th Fighter Bomber Group was recently reported at Marston, Kent.

363rd Tact. Recon. Wg., Shaw AFB.

116th Fighter-Bomb. Wg., George AFB, California.
F84s.
Soon to go to FEAF.

118th Tact. Recon. Wg., Memphis Municipal Apt, Tennessee.
Has sqdns. at Birmingham, Alabama.

123rd Fighter-Bomb. Wg.

137th Fighter-Bomb. Wg.

Also connected with the 9th Air Force are the following Tow Target Squadrons.

1st Tow Target Sqdn., Briggs AFB, Texas.

2nd " " " , Newcastle, Delaware.

3rd " " " , Sewart AFB, Tennessee.

4th " " " , George AFB, California.

18th Air Force, Hq., Donaldson AFB, South Carolina.

CG., Maj. Gen. Robert W. Dougless

435th Troop Carrier Wg., Miami International Apt., Florida.

301

375th Troop Carrier Wg., Donaldson AFB.
CO, Col. Lance Call.
An AFR unit from Pittsburgh, called to active duty 15 Oct. 1950.
57th Troop Carrier Sqdn.

516th Troop Carrier Wg., Memphis Municipal Apt., Tennessee.

314th Troop Carrier Wg., Sewart AFB, Tennessee.
16th Troop Carrier Assault Sqdn.
314th Maint. Sqdn.

313th Troop Carrier Wg., Bergstrom AFB, Texas.

Note: The 433rd Troop Carrier Wg., an AFR unit from Cleveland, was under the command of the 18th AF after being recalled to active duty on 15 Oct. 1950, but has recently been moved to Germany. See USAFE.

316th Troop Carrier Wg.

434th Troop Carrier Wg.

514th Troop Carrier Wg., Mitchell AFB.
125th Fighter-Bomber Sqdn., Alexandria, Louisiana.
F-84s.

3. AIR DEFENSE COMMAND

ADC is organized primarily to provide for the air defense of the United States. Component units are strategically located at bases throughout the United States to ward off or contain enemy attack. These units are equipped with fighter-interceptor aircraft, including, in the case of at least three wings, all-weather fighters.

ADC contains three defense forces for the United States: Eastern, Central, and Western. Of the thirteen fighter-interceptor wings identified in this study, six were assigned to Eastern, three to Central, and four to Western. Two all-weather wings are known to be assigned to Eastern, one to Western. Three other fighter-interceptor wings have been identified in the 5th Air Force of FEAF.

In addition to the use of interceptor aircraft, air defense requires a warning system, in which the primary component is a radar screen, supplemented, to some extent, by corps of volunteer observers organized in the Aircraft Warning Service.

The radar screen is organized tactically and geographically into divisions. On the perimeter of each division is a radar-equipped Ground Control Intercept Station (GCI), and behind the GCI's is an Air Defense Control Center (ADCC). It is the function of the GCI, upon spotting a plane, to check the Civil Aeronautics Authority's schedule to determine whether it is a scheduled flight, and, if not, to warn the fighter-interceptor base directly, which will fly interception immediately. This system of direct warning conduces to efficiency insofar as radar is efficient, and new radar detectors, with their 150-mile beams and omni-cirectional detection, are far more efficient than earlier radar. But the radar screen is far from being completely equipped with this new apparatus, and at present, much World War II radar is in use.

Even when the new installations are complete, there will still be gaps, resulting especially from the fact that radar beams do not curve with the earth's surface and low-flying craft may escape radar detection.

Because of this temporary lack of equipment and this permanent deficiency in the 100% effectiveness of the equipment, the warning system also contains its volunteer personnel. This personnel is organized in two groups, firts, solitary ground observers stationed at posts eight miles apart and reporting to (second) those in the filter centers, of which there is one for about every 300 observers. The filter center checks the reports from observers and when it receives three reports of the same plane, it then warns the fighter-interceptor base to fly interception at once. On the face of it, this seems a dangerously slow method of warning against fast-flying aircraft, and air defense exercises which were held in June showed that enemy planes could get over important industrial positions with relative ease.

Another element in air defense, in addition to the interceptor force and the warning system, is the availability of effective anti-aircraft weapons. Most of the guns currently available are believed to be 90 and 120 millimeter guns of World War II. These might force an enemy to operate at high altitudes, but they could do little more. In this phase of defense, development of guided missiles is peculiarly important.

For further information pertinent to ADC, see other sections and tables of this study as follows: 1) statement of defense capabilities, 2) statement of strength in terms of aircraft, 3) statement and tables on aircraft performance, and 4) tables of bases, showing which bases this study has identified as ADC bases.

Hq., Ent AFB, Colorado Springs, Colorado.

CG, Lt. Gen. Benjamin W. Chidlaw.

304

Eastern Air Defense Force, Hq. Stewart AFB, New York.

CG, Maj. Gen. Fred H. Smith.

26th Air Defense Div., Mitchell AFB, New York.

50th Ftr.-Int. Wg., Otis AFB, Massachusetts.

33rd Ftr.-Int. Wgs., " " "

101st Ftr.-Int. Wg., Burlington AFB, Vermont.
134th Ftr.-Int. Sq.
764th AC & W Gp. (PP), Ft. Ethan Allen, Vt., Allied Unit.

132nd Ftr. Wg., Dow AFB, Maine.

30th Air Div., Selfridge AFB, Michigan.

56th Ftr.-Int. Wg., Selfridge AFB, equipped with F-94 all-weather Ftrs.

52nd Ftr.-All-Weather Wg., McGuire AFB, New Jersey.
CO, Col. Ernest H. Beverly.
F-94s.

113th Ftr.-Int. Wg., New Castle County Apt., New Castle Delaware.

1st Ftr.-Int. Gp., Griffiss AFB, New York (moved to George AFB, WADF.)

Squadrons whose wing assignments are unidentified:
71st Ftr.-Int. Sq., Greater Pittsburg Apt., Coraopolis, Pa.
136th Ftr.-Int. Sq., Niagara Falls, Muni. Apt., New York
148th Ftr.-Int. Sq., Dover AFB, Delaware.

A new EADF base is to be built at Youngstown, Ohio.

Central Air Defense Force.

Hq., Kansas City, Missouri (temp.), Grandview, Missouri (perm.)

31st Air Div., Wold-Chamberlain Apt., Minneapolis, Minnesota.

133rd Ftr. Wg., Holman Muni. Apt., St. Paul, Minnesota.

115th Ftr.-Int. Wg., Scott AFB, Illinois.
F-51s.

175th Ftr.-Int. Sq., Sioux Falls Muni. Apt., South Dakota.

33rd Air Div., (Def.), Tinker AFB, Oklahoma City, Oklahoma.

Western Air Defense Force.

Hq., Hamilton AFB, California.

28th Air Div. (Def.), Hamilton AFB, California.

542nd AC & W Gp., Hamilton AFB, California.
667th Aircraft Warning Sq., Hamilton, California.
774th AC & W Sq., Hamilton, California.

544th AC & W Gp., Norton AFB, California.

78th Ftr.-Int. Gp., flying interceptors at San Francisco.

188th Ftr.-Int. Sq., Long Beach Muni. Apt., California.

1st Ftr.-Int. Wg., George AFB, Victorville, California. An ANG unit.

25th Air Div. (Def.), Silver Lake AFB, Everett, Washington.

CG, Brig. Gen. Clinton D. Vincent.

325th Ftr.-All-Weather Wg., McChord AFB, Washington.
CO, Col. T. Alan Bennett.
325th Maint. & Supply Gp.
325th AB Gp.

81st Ftr.-Int. Wg., Hq. Larson AFB, Moses Lake, Washington.

116th Ftr.-Int. Sq., Geiger Field, Spokane, Washington.

 306

MILITARY AIR TRANSPORT SERVICE

MATS was created 1 June 1948 by action of the Joint Chiefs of Staff, to consolidate the former Air Transport Command and the Naval Air Transport Service into a single air transport service for the military establishment. The command includes both Air Force and Navy planes and personnel, but is under direct supervision of the Chief of Staff of the Air Force, although the Navy contingent of MATS reports to the Chief of Naval Operations.

The Transport Service of MATS is organized in three divisions: the Atlantic Division, with headquarters at Westover AFB, the Continental Division, with headquarters at Kelly AFB, and the Pacific Division with headquarters at Hickam AFB, Hawaii.

The scale of MATS operations is indicated by the fact that, during the year ending June 1, it airlifted 400,000 passengers and 60,000 tons of cargo. It has performed two important operations, first the Berlin Airlift and more recently the trans-Pacific Airlift (see map of MATS routes in Chart VII).

The scale of operations of the Pacific Airlift has been impressive. During the first year of the Korean War (to 29 June 1951), the Airlift transported some 91,500 men, mostly troops, across the Pacific, as well as 20,600 tons of cargo and mail, and it brought back 28,000 wounded to the U.S. To achieve this result, the lift was flying 742,000 ton miles, or 252,000 plane miles a day.

This was on the routes from either McChord AFB, Tacoma (via Anchorage and Shemya in the Aleutians) or Travis AFB (via Honolulu and Wake or via Honolulu, Johnston Island, Kwajalein and Guam) to Tokyo. The lift has operated under a separate command, the West Coast Air Lift Task-Force, headed

by Brig. Gen. Henry C. Kristofferson. For purposes of the lift, MATS at the start of the Korean campaign, diverted 50 Douglas C-54s from its Atlantic and Continental Divisions, and it later added 75 more C-54s and the 61st and 62nd transport groups; but the lift has also had some Canadian and Belgian planes, and very heavy reliance has been placed upon commercial planes chartered for the trans-Pacific route. In fact, commercial carriers hauled more than 55% of the outbound tonnage, while MATS planes hauled 35% and United Nations planes hauled just under 10%. In terms of personnel, chartered planes hauled 63%, MATS planes 28% and United Nations planes 9%.

One reason why MATS could not handle a larger proportion of this traffic is that it is maintaining numerous other commitments throughout the world, including heavier shipments to Europe and a greater bulk of equipment for SAC's overseas forces, and, most of all, the actual combat lift from Japan into Korea.

The Combat Lift, which is under command of FEAF, became vital after U.N. forces broke out of the bridgehead in South Korea. With the railway system negligible, the roads extremely bad and the harbors far below expectation, air transport became the primary answer to the Korean supply problem. To apply the answer effectively, a Combat Cargo Command was organized as a provisional division of the FEAF and Maj. Gen. William H. Gunner, who had commanded both the "Hump" and the Berlin lift operations was temporarily detached from MATS to lead it.

The Japanese terminus of CCC, connecting with the trans-Pacific lift, was at Tachikawa AFB, outside Tokyo. Headquarters were placed at Ashiya AFB on the northernmost tip of Kyushu Island just 100 miles across the sea from Pusan.

Ashiya was the base for the 314th troop carrier wing (Fairchild C-119

Packets), the 21st Troop Carrier Squadron (Douglas C-47s) and Marine Squadron VMR-152 (Douglas R5Ds). Tachikawa was the base for the 314th Troop Carrier Wing (Curtiss C-46s) which operated chiefly within Japan.

Probably the most outstanding single mission of CCC was the Pyongyang paradrop, in which C-119s and C-47s dropped some 6,000 troops of the 11th Airborne Division's 187th Airborne Regiment. Figures up to March, 1951, indicated that this Command had lifted 326,951 Korea-bound troops and medical evacuees, and that the total tonnage it had handled was 165,949.

See organizational diagram of Pacific Airlift and Combat Cargo Command, Chart VIII.

Apart from its cargo-carrying responsibilities MATS has several other important functions. It operates the Air Rescue Service, the Flight Service (charting and control of military aircraft flights within the U.S.), the Air Weather Service (for supplying weather information and forecasts on a worldwide basis) and the Airways and Air Communications Service (maintaining radio and other communications facilities).

Hq., Washington National Apt., Gravelly Point, Virginia.
CG, Lt. Gen. Laurence S. Kuter.

Continental.

In April, the first Air Resupply and Communications Wing was organized at Mountain Home AFB, Idaho. Its mission involves not only aerial resupply of military units but also dropping psychological warfare material.

Units:

1254th Air Trans. Sq., Washington Nat'l. Apt.

1703rd Air Trans. Gp., Brookley AFB, Alabama.
CO, Col. Glen R. Birchard.

1274th Air Trans. Sq.
Handles instruction in the C-97A

1705th Air Trans. Sq., McChord AFB, Washington.
CO, Col. Richard Bromiley.

RCAF 426th Trans. Sq. also ass'd here.

1704th Air Traf. Sq., Travis AFB, California.

1600th Air. Traf. Sq., Westover AFB, Massachusetts.

1905th Airways & Air Comm. Service Sq., McChord AFB, Washington.

18034e AACS Gp.

1923rd AACS Sq., Kelley AFB, Texas.

[1701st Air Trans. Gp. ? Great Falls AFB, Montana ?]
1701st Med. Gp., Great Falls

Pacific Division

Dep. Comm. and Comm., AF Activities, Pacific, Brig. Gen. H. Q. Huglin.

1503rd Air Trans. Wg., Haneda AB, Tokyo. APO 226.
CG, Brig. Gen. Aubry L. Moore.

1500th Air Trans. Wg., Hickam AFB, Hawaii. APO 953, SF.
Air Trans. Sq. 8, Hickam Field, Hawaii.
(Awarded Flying Safety trophy in July for third consecutive time.)

Atlantic Division

1605th AB Gp., Lagens Field, Azores.

1602nd Air Trans. Wg., Wiesbaden, Germany.
1603rd AB Gp., Wheelus Field, Tripoli.
1261st Air Trans. Sq., Wheelus Field.

1604th AB Gp., Kindley AFB, Bermuda. APO 856, NY.

1414th AB Gp., Dhahran, Saudi Arabia.

1933rd AACS Sq., Harmon AFB, Newfoundland. APO 864, NY.

Air Rescue Service

1st Air Rescue Squadron, McDill AFB, Florida.
2156th AR Unit (TTU), " " "

2nd AR Sq., Clark AFB, Philippines

Air Rescue Service (cont.)

3rd AR Sq., Korea. Lt. Col. Klair E. Back, CO.
The 3rd AR Sq. has naturally been the most active of late. They have rescued over 1800 UN personnel from behind enemy lines. Besides H-5 and H-19 helicopters, they are using the SA-16 amphibian in this work.

4th AR Sq., Hamilton AFB, California.

5th AR Sq., Westover AFB, Massachusetts.
Flight "D" - Selfridge AFB, Michigan.

6th AR Sq., Pepperell AFB, Newfoundland.

7th AR Sq., Wheelus Field, Tripoli, Libya.

9th AR Sq., Bushy Park, England.

10th AR Sq., Elmendorf AFB, Alaska.

11th AR Sq., Hickam AFB, Hawaii.

Air Weather Service. Hq. Andrews AFB, Maryland.

CG, Brig. Gen. W. O. S. Senter.
Chief of Intell. Div., Lt. Col. Clarence E. Roache.

30th Weather Sq., Kimpo AB, Korea.

5. CONTINENTAL AIR COMMAND

Continental Air Command was reorganized in 1949 and its Tactical Air Command and Air Defense Command were made separate major commands; thus ConAC today is almost exclusively a reserve organization. Headquarters are at Mitchell AFB, Hempstead, L. I., but plans are now being made to move to Grandview, Missouri in 1953. Major General Willis Hale is the commanding general of ConAC. Its mission is the organization, administration and training of the reserve units under its command, the Air National Guard, the Air Reserve, the Air Force Reserve Training Centers, the Explorer Scouts and the Civil Air Patrol. These activities are administered through the four regional continental air forces: First Air Force, northeastern U.S., Hq. Mitchell AFB, N.Y., Maj. Gen. James P. Hodges, Commanding; Tenth Air Force, north-central U.S., Hq. Selfridge AFB, Michigan, Maj. Gen. Harry A. Johnson, Commanding; Fourteenth Air Force, southeastern U.S., Hq. Robins AFB, Macon, Ga., Maj. Gen. Charles E. Thomas, Jr., Commanding; Fourth Air Force, western U.S., Hq. Hamilton AFB, California, Maj. Gen. William E. Hall, Commanding.

Air National Guard

During Fiscal Year 1951, the ANG was reorganized under a Combat Wing Base plan to provide 427 units, both combat and supporting , grouped into 27 combat wings. (Budget, FY 1952, p. 125). At the time the activities of FY 1951 were being planned, it was expected that 7,167 officers and 42,333 airmen would take part in the program (81:2, House Approp., Def. Approp., Pt. 3, p. 1671), but as of September 1950, there were only 44,728 officers and men in the ANG organized into 72 fighter squadrons, and 12 bomber squadrons (AIDig., September, 1950, p. 5). Training at technical schools and in on-the-job training projects was provided for 2,131 officers and 3,058 airmen in the FY 1951 budget (81:2, House

Approp., Def. Approp., Pt. 3, p. 1671). 113 ANG installations were maintained during FY 1951, and training was carried on with approximately 2,500 aircraft. Most of the training aircraft of the ANG, however, are obsolete; at the beginning of FY 1951, only 211 ANG planes were jets (116 of them obsolescent F-80s) and 2,308 were types such as the C-47, F-47, and F-51. (81:2 , House Approp., Def. Approp., Pt. 3, p. 1679).

As of March 27, 1950, the following units were training with jet aircraft:

196th	Ftr.	Sqdn.,	Calif.,	F-80C
159th	"	"	Fla.,	"
158th	"	"	Ga.,	"
132nd	"	"	Mo.,	"
173rd	"	"	Nebr.,	"
126th	"	"	Wis.,	F-80A
142nd	"	"	Del.,	F-84C
116th	"	"	Spokane, Wash.,	F-84C
127th	"	"	Wichita, Kans.,	"
171st	"	"	Detroit, Mich.,	"
121st	"	"	Md.,	"
166th	"	"	Ohio	"
138th	"	"	N. Y.,	F-84B

Most of these units have probably been called to EAD by now.

22 of the 27 combat wings of the ANG and several supporting units have been called to EAD. By the end of 1951 the AF will have called up 19 non-flying units of the ANG, including 11 AC & W Groups, 5 Signal Light Construction companies and 3 Communications squadrons (ARF Rev., May 1951, p. 7).

During FY 1952, training of the 5 remaining wings (which include 18 separate combat squadrons plus supporting units) will continue on an intensified

schedule. The Budget for 1952 provided pay and allowances for 2,214 officers and 14,104 airmen for inactive duty training, as well as 15 days active duty training for 2,665 officers and 19,900 airmen. It is thus seen that the strength of the reserves left on inactive service in the ANG is extremely small.

The following units of the ANG have been identified, but some of them may be in active service by now.

1st Air Force

514th Trp. Carr. Wg., Mitchell AFB, N.Y.
Brig. Gen. Arthur L. McCullough, CG

512th Trp. Carr. Wg., Delaware
Brig. Gen. E. H. Molthan, CG

67th Ftr. Wg., Massachusetts
Brig. Gen. Lyle E. Halstead, CG

107th Ftr. Wg., Hq. Niagara Falls, N.Y.
Col. Robert Kirsch, CO
137th Ftr. Sq., Westchester County
138th Ftr. Sq., Hancock Fld., Syracuse
139th Ftr. Sq., Schenectady
Unit being equipped with F-84s.

121st Ftr. Squadron, District of Columbia
Lt. Col. Willard W. Millikan, CO
Unit flies some variety of jets.

104th Ftr. Squadron, Maryland
Lt. Col. Robert L. Gould, CO

4th Air Force

403rd Trp. Carr. Wg. (M)
Brig. Gen. Chester E. McCarty, CG

1st Ftr. Wg., George AFB, Victorville, Calif.

14th Air Force

105th Ftr. Squadron, Nashville, Tenn.

125th Ftr. Squadron, Tulsa, Oklahoma

Air Reserve

The AF Rexerve activities are split into five programs: the Mobilization Assignment program, the Corollary Unit program, the AF Reserve Center Program, the Volunteer Air Reserve Training Unit program and the Extension course program. The Mobilization Assignment program provided training during FY 1951 for 12,523 Reserve Officers, who train individually on pay status about once a week and go on active duty for two weeks once a year. The training takes place on AF bases, where they report regularly for instruction in their particular job. 4,178 pilots in this program receive flying proficiency training in Reserve aircraft. Others use regular Air Force planes.

During FY 1952, no flight training will be furnished. Mobilization assignments will be used to augment T/O & E and non-T/O & E units to war strength or to meet war-time requirements. It is contemplated that by the end of FY 1952, 2,040 Reserve Officers and 5,617 airmen will have mobilization assignments augmenting T/O & E units to war-time strength, and 7,351 Reserve officers and 11,747 Reserve airmen will have mobilization assigments to augment non-T/O & E units to war-time strength.

The Corollary Unit program is composed of Reserve units formed to duplicate particular units of the AF, so that they can replace the regular unit at once in the event of deployment. At the beginning of FY 1951, there were 198 corollary units (5185 officers, 10,262 airmen) and it was anticipated that by the end of FY 1951 there would be only 72 units (1621 officers, 3425 airmen). During FY 1952 the AF anticipates that an average of 72 corollary units will be in operation (year-end assigned strength 1,367 officers, 3,136 airmen).

The Air Force Reserve Training Center program has an aggregate strength of 68,627 officers and men, organized into integrated wings and

squadrons, whose training takes place at 23 training centers throughout the U.S. The reservists report to the centers as a unit at stated intervals and go through operational exercises. The 2466th AFTRC at Atterbury, Indiana is a typical unit; all of the centers have not been located, but there are two each at Long Beach, California and Chicago, Illinois, and one at Bedford, Massachusetts, Mitchell AFB, New York, Westover AFB, Massachusetts, Hamilton AFB, California, Portland, Oregon and Godman AFB, Kentucky. 25 units were so trained during FY 1951, of which 5 were light bombardment wings and 20 were troop carrier wings. (All the information above is from 81:2, House Approp., Def. Approp., Pat. 3, pp. 1632-1638.) The following units have been identified:

459th Bomb. Group (M), including the 759th Bomb. Sq.
Davis Monthan AFB, Arizona. Equipped with B-50s & B-29s. The planes used by this unit are probably borrowed from SAC.

443rd Trp. Carr. Wg., Hensley AFB, Dallas, Texas.
Now in the process of being called to EAD.

438th Trp. Carr. Wg., Omaha, Nebraska.

These units may now be on active duty, but they have not been identified in any other command. According to the Herald Tribune of 13 July, 25 reserve wings have been called up since the outbreak of the Korean War, thus it may be that all the organized wings have been called up. This seems more likely since the ARF Review of July 1951 speaks of the last seven wings having been called up on 1 May (514th Wg., 443rd Wg., 434th Wg., 63rd Wg., 89th Wg., 419th Wg., 440th Wg.), and the Air Force has no program for the Air Force Reserve Training Center in FY 1952.

The Volunteer Air Reserve Training Unit program is the most inactive segment of the Reserve. The strength of this organization was about 48,000 at the beginning of FY 1951; it was organized in 449 VAR training units. They train individually at AF installations, but their training is sporadic

and scant since it is voluntary and they are not paid for it. ConAC is this summer presenting an indoctrination course for 1,900 VARTU officers in preparation for the expansion of the VARTU program from the present 100 groups, 454 squadrons to 160 groups, 800 squadrons (ARF Rev., July 1951, p. 5). By the end of July 1951, a total of 28,917 VAR officers had been recalled to EAD. The recall for 1952 will involve only 19,000 officers, including ROTC trained men, and 6,848 airmen. VART units are scattered throughout the US; two of them are the 9148th VART Group in Minnesota and the 9181st VART Group at Atlanta, Georgia (with subsidiary squadrons at Monroe, La. and Datona Beach, Fla). The Air Force plans to increase the number of VAR units to 960 by the end of FY 1952, and to offer active duty training tours of 15 days to 7,500 selected Reserve Officers of VAR.

The Extension course program offers correspondence course training to 75,000 reservists from any of the above-mentioned groups.

Virtually all the effective strength of the Reserve has been called up, but the plans for FY 1952 call for regrouping the remaining 225,000 officers and 75,000 airmen into some 30 wings. These will be mainly paper units, for the budget for 1952 does not provide any flying for the Reserve, because of the lack of aircraft. During the FY 1951, the Reserve had only 925 planes, most of them out-of-date, but the AF has decided that during the expansion to 95 wings, new aircraft cannot be diverted to the Reserve. It is hoped, however, to reconstruct the ANG to a strength of 27 wings of the T/O & E type with full equipment (Air Force, June 1951, p. 45).

Air Reserve Officers Training Corps

This program, carried out in non-military colletes and universities, is an important part of the AF officer procurement system. It is being expanded along with everything else as the AF builds toward 95 wings. In October, 1950, there were 61,723 students enrolled in the ROTC program in 125 different

institutions. It is estimated that by October, 1951, there will be 128,676 students enrolled (82:1 House Armed Services Comm., # 4, Univ. Mil. Train., p. 560) and the Budget for FY 1952 increases the number of participating institutions to 187. The program should produce about 12,875 graduates during FY 1952. The Af commissioned graduate procurement objective is 27,750 annually.

Civil Air Patrol

There were 1423 CAP units in August 1951, including 52 wings, 1313 groups, 603 squadrons and 637 flights. The personnel includes 45,220 senior members and 32,990 juvenile cadets.

The AF is setting up a program for training its own engineers under the command of ConAC. The aviation Engineer Force has been created with headquarters at Wolters AFB, Mineral Wells, Texas. Army engineers are undoubtedly being used to help set up the program. ConAC has acquired half of the Beale Bombing and Gunnery Range at Marysville, California from ATRC for training its engineers.

6. AIR MATÉRIEL COMMAND

The principal responsibility of the Air Matériel Command is procurement, supply and fourth echelon maintenance for the entire Air Force. The headquarters for the Command are at Wright-Patterson AFB, Dayton, Ohio (2750th AB Wing maintains the base functions here), and it is commanded by Lt. Gen. Edwin W. Rawlings. The director of Supply, Maintenance and Services is Maj. Gen. George W. Mundy. Some of the functions of AMC have recently been taken over by the new Air Research and Development Command, and some were earlier given to Air Proving Ground, but AMC retains its extensive depot chain and its procurement system.

The United States has been divided into six air procurement districts: The Northeastern Air Procurement District, 14-17 Cour Square, Boston, Mass.; The Eastern Air Procurement District, New York City; The Central Air Procurement District, Detroit, Michigan; The Southern Air Procurement District, Fort Worth, Texas; The Midcentral Air Procurement District, Chicago, Illinois; and The Western Air Procurement District, Terminal Annex, Los Angeles, California (CO, Brig. Gen. William M. Morgan). These districts are broken down into 23 regional offices; there are also 28 residencies in larger plants.

To fulfill its supply and maintenance functions, AMC has a chain of eight huge depots scattered through the country:

WRAMA, Warren Robins AFB, Macon, Georgia.

MOAMA, Brookley AFB, Mobile, Alabama.

MAAMA, Olmstead AFB, Middletown, Pennsylvania.

> The Middletown depot is now considered inadequate for the volume of work required of it, and a new base is being planned nearby at Lancaster, Pa., to supplement its facilities. $74 million will be needed for the proposed construction. The money has not yet been appropriated by Congress.

OCAMA, Tinker AFB, Oklahoma City, Oklahoma.

Steps are being taken to make this the center for the overhaul and modification of the B-47. The B-36 modification program now being performed at Tinker will be moved to Kelly.

SAAMA, Kelly AFB, San Antonio, Texas.

Overhaul center for the R-4360 engine which powers the B-36 and B-50 (ANAFJ, 4 Aug., p. 1405).

SBAMA, Norton AFB, San Bernadino, California.

OOAMA, Hill AFB, Ogden, Utah.

CG, Brig. Gen. A. H. Gilkeson. Hill AFB has been designated the world center for the supply and maintenance of the F-89, the Northrop Scorpion. The 25th A/D Wg. and the 2947th Dep. Tng. Sq. stationed here.

??AMA, Mather AFB, Sacramento, California.

In addition to these depots, which are headquarters of whole matériel areas in addition to having specific functions such as those of Tinker and Hill, there are several specialized depots and one storage depot in AMC:

862nd Spec. Depot, Dayton, Ohio.

830th Spec. Depot, Memphis, Tennessee (Mallory Spec. Depot)

822nd Spec. Depot, Maywood, California (Cheli AF Spec. Depot)

831st Spec. Depot, Shelby, Ohio (Wilkins AF Spec. Depot)

832nd Spec. Depot, Topeka, Kansas.

829th Spec. Depot, Gadsden, Alabama.

Binghamton Spec. Depot, Binghamton, New York.

Lynn Haven Petroleum Storage Area, Panama City, Florida.

New construction at all these depots has been approved by the House Armed Services Committee. Recently the civilian staff at Binghamton Spec. Depot was reduced by more than 100 workers, who presumably are being replaced by military personnel.

7. AIR RESEARCH AND DEVELOPMENT COMMAND

This command was established on January 1, 1950, but did not begin operating until May 1951. Its headwuarters were at first at Wright-Patterson AFB, Ohio, but they have recently moved to Baltimore. Temporary offices were set up in the Sun Building in Baltimore, but plans are being made to move to a permanent location at the Friendship International Airport. ARDC is commanded by Lt. Gen. Earle E. Partridge; his Vice Commander is Brig. Gen. Alfred R. Maxwell and his Chief of Staff, Brig. Gen. Ralph P. Swofford, Jr. The Director of Research and Development is Brig. Gen. Donald N. Yates and the Commanding Geneneral of the Air Development Force at Wright Field is Brig. Gen. Fred R. Dent.

ARDC was formed by splitting off the research activities of Air Matériel Command and adding to them several other miscellaneous development projects from other parts of the Air Force. Now all such activities are under this single command, whose mission is to investigate and develop new weapons, equipment and techniques for all branches of the AF.

Seven major bases and laboratories have been placed under this command: Wright Air Development Center, Wright AFB, Ohio; Rome Air Development Center, Griffiss AFB, New York; AF Missile Test Center, Patrick AFB, Florida; Holloman AFB, Alamogordo, New Mexico; Arnold Engineering Development Center, Tullahoma, Tennessee; Cambridge Research Center, Cambridge, Massachusetts; AF Flight Test Center, Edwards AFB, Muroc, California.

Wright Air Development Center. AMC turned over its Engineering Division, its Flight Test Division, its All-Weather Flying Division and its Office of Air Research to ARDC when it was formed. These activities remain at Wright Field and have been grouped together as the Air Development Force of ARDC.

The facilities include wind tunnels, climate testing buildings and other aeronautical research devices.

AF Flight Test Center, Edwards AFB, Muroc, California. 2759th Experimental Wing. Virtually all the final testing of AF X-planes and other flying equipment is made here.

Rome Air Development Center, Griffiss AFB, Rome, New York. The principal research center for the AF's electronics equipment. 2751st Experimental Wing.

Cambridge Research Center, Cambridge, Massachusetts. Given over to research on specific problems of a scientific and theoretical nature, including electronics.

Arnold Air Development Center. This research center has been opened only recently, but $100,000,000 have been authorized by Congress for building it into the most important of the AF test facility for high altitude jet engines. Facilities will include an 8' x 8' supersonic wind tunnel and 15' x 15' hypersonic gas dynamics wind tunnel, capable of simulating speeds up to 3500 mph. The entire Center is expected to be completed by fall of 1953, but many of the facilities are in operation now.

AF Missile Test Center, Patrick AFB, Florida. This base has been in operation for some time, known as the Long Range Proving Ground or the Banana River Project. Maj. Gen. William L. Richardson commands this installation, whose main function is to operate a long flight-test range and provide all facilities for pre-flight and flight-testing of guided missiles which are passing through research and development stages. The flight-test range extends from Cape Canaveral almost 5,000 miles southeast over the Atlantic. Stations for collecting data on the performance of the missiles are at: Point Jupiter, north of West Palm Beach; Grand Bahama Island (by arrangement with the British);

and other radar-equipped, data-collecting stations are being established on San Salvador and Mayaguana, Bahamas, and on Puerto Rico. V-2 type rockets are tested here in horizontal flight, and in at least one case the Bumper rocket was tested with the two-stage WAC Corporal attached (Ordnance, July-August, p. 158). The 4800th Guided Missiles Wing operates the facilities at Patrick.

Holloman AFB, Alamogordo, New Mexico. This center is principally a testing center for guided missiles, and it has recently been put under the command of the AF Missile Test Center at Patrick AFB. Holloman AFB is used mainly for short-range testing and for vertical altitude testing. The 6540th Missile Test Wing and the 3089th Experimental Group are stationed here. In 1952, there will be a 10% increase in ground tests and up to a 600% increase in launching certain specific missiles.

Recently the House Armed Services Committee approved the authorization of some $13,000,000 for expanding the research facilities at the following installations:

Langley Aeronautical Laboratory, Langley AFB, Virginia. To modernize the 7' x 10' wind tunnel and enlarge tunnel building. $100,000 assigned to its subsidiary, Wallops Island Station.

Ames Aeronautical Laboratory, Moffet Field, California. $1,550,000 to modernize the 6' x 6' wind tunnel.

Lewis Flight Propulsion Laboratory, Cleveland, Ohio. $1,805,000 for expanding research facilities for rockets and ramjets under high altitude conditions.

AF Flight Testing Center, Edwards AFB, California. $4,323,000 for expanding the high-speed flight testing facilities. AF indicated that this request had top priority among these four. Most of the projects carried out

by all these research activities are highly secret.

ARDC is perhaps involved also in the activities carried on jointly with the Navy at the Naval Auxiliary Air Station at El Centro, California. Among these is a parachute testing facility.

8. HEADQUARTERS COMMAND

Headquarters Command is the principal administrative or "housekeeping" agency for the high command of the Air Force. It is based at Bolling AFB, Washington, D.C., and is commanded by Brig. Gen. Morris J. Lee. Its activities are many and miscellaneous; it is the parent organization for USAF personnel on duty with embassies, air attaché offices, military missions and other special activities. It maintains the 1100th USAF Sp. Rept. Group at Sandia Base, New Mexico, for close liaison with the Special Weapons Command. The three major components of the Command are Bolling AFB, Andrew AFB, Maryland, and the USAF Special Activities Wing at Fort Myer, Virginia. As the service unit for the USAF high command, it provides aircraft and flying facilities for the proficiency flying required of all rated officers in the Washington area. Most of the flying is done from Andrews AFB (<u>Flying</u>, May 1951, p. 122).

9. AIR TRAINING COMMAND

Air Training Command is charged with the individual and group training of USAF personnel. Responsibility ranges from the basic training and indoctrination of new recruits to extremely advanced training given to aircrewmen prior to permanent assignment with occupational units.

The importance of ATRC is greatly enhanced by the fact that the Air Force has a higher proportion of personnel with advanced training than any other service. This is a permanent factor, and there is, at present, a temporary factor contributing to the significance of ATRC: this is the fact that during the period of rapid build-up to 95 wings and of increased recruitment, an unusually high proportion of airmen are in training - basic or advanced. As of 1 July 1951, 25% of all Air Force personnel was assigned to training, while only 29% was directly associated with combat wings.

For basic training, the AF now has two regular installations, Sampson AFB and Lackland AFB, and a temporary installation at Sheppard AFB. It will open a third regular installation, Camp Shoemaker, during fiscal year, 1951-1952. The present basic course is eight weeks and the capacity as of 1 July was 40,000 (consisting of 11,000 at Sampson, 21,000 at Lackland, including 8,500 tents, and 9,000 at Sheppard AFB).

During fiscal 1951-52, the Air Force will phase out the tents at Lackland and the temporary installation at Sheppard, but will increase its facilities at Sampson and Lackland, and will assigne more men per unit space. These changes plus the opening of Shoemaker, will increase capacity to 92,500 at the end of the fiscal year. When this full capacity is reached, the basic course will be returned to its normal length of eleven weeks.

Advanced training is divided between the Flying Training Air Force

and Technical Training Air Force.

For flying training, ATRC will operate thirty-four installations at the end of the fiscal year, as contrasted with 20 at the beginning. At the beginning of fiscal 1951-52, 4,000 men were in pilot training, and the number will be built up to 7,200 by the end of the year. Slightly less than 4,000 were in observer training and the number will be built up to 5,000. Specific schools and types of training are shown below.

For technical training in aircraft maintenance, engines, electronics, radio, etc., ATRC operates seven technical training schools listed below, and it also trains a portion of its personnel at civilian schools with which it has contracts. Between 30 June 1951, and 1952, the number of men in technical training at the AF's own technical training schools is expected to increase from 60,000 to 85,000 while approximately 45 civil contract training schools will carry a constant load of about 15,000, and Army and Navy schools about 400 or 500.

Many of the training programs require a long interval of time (e.g., the bombardment course is 36 weeks, and some of the courses extend over a year), but the time-lag in training is less retarding, in terms of build-up, than the time lag on aircraft procurement and construction of bases. In February, 1950, General Edwards testified that personnel skill was lagging behind equipment in some fields, and especially in electronics. But it appears now that the Air Force's trained personnel is fully adequate for the available aircraft and facilities.

Hq. Scott AFB, Belleville, Illinois.

CG, Lt. Gen. Robert W. Harper.

Dep. CG, Maj. Gen. Kenneth P. McNaughton.

 327

Flying Training Air Force.

Hq., James Connally AFB, Waco, Texas.

CG, Maj. Gen. Warren R. Carter.

Civilian companies are operating basic training pilot schools under contract with FTAF at:

Greenville AFB, Mississippi.

Columbus AFB, Mississippi.

Spence Field, Moultrie, Georgia.
3302nd Tng. Sq., Spence Field, Georgia.

Bartow Field, Florida.

Hondo Apt., Texas.

Malden Apt., Missouri.

Bainbridge, Georgia.

Marana, Arizona.

Kinston, North Carolina.

Advanced Training Schools are at:

San Marcos AFB, Texas.
Pilot Tng. $409,000 appropriated for construction.

Williams AFB, Arizona.
3525th Plt. Tng. Wg.

Perrin AFB, Texas.
3555th Plt. Tng. Wg. (Bsc.)

Ellington AFB, Texas.
3605th Nav. Tng. Wg.

Randolph AFB, Texas.
$36,000,000 authorized for construction.

Goodfellow AFB, Texas.

Reese AFB, Lubbock, Texas.

Bryan AFB, Texas. CO, Col. Jas. C. McGehee.
A jet training base. $5.4 million authorized for construction.

Tyndall AFB, Florida.
    3625th Tng. Wg.

Pinecastle AFB, Florida.
    $25 million construction program in progress.

Craig AFB, Alabama.

Mather AFB, California.
    CO, Brig. Gen. Julius K. Lacey.
    Preflight training for B-47 crews. Course 43 weeks long.
    2 classes have gone through.

Nellis AFB, Las Vegas, Nevada.
    Probably a bombardier school.

Luke AFB and Auxiliaries, Luke, Arizona.

Williams AFB, Arizona

Vance AFB, Enid, Oklahoma

Bombardment course is now 36 weeks.

Technical Training Air Forces.

Hq., Keesler AFB, Biloxi, Mississippi.

CG, Maj. Gen. C. C. Chauncey.

When at full strength, will have 160,000 officers and men. Bases and schools at:

Keesler AFB, Mississippi.
    Radar-Electronics School.
    32 week course. Now training 300 students a day.
    3380th Tech. Tng. Gp.

Chanute AFB, Rantoul, Illinois.
    3345th Tech. Tng. Gp.
        Officers school in A/C Repair and Maint.
        E M school for Electric Mechanics.
        " " " Hydraulic "
        " " " Instrument "
        " " " Power Plant "
        " " " Propeller "
    3499th Mobile Tng. Gp. At Chanute. Now training instructors to
    train AF personnel in pilotless a/c.

Scott AFB, Belleville, Illinois.
    Communications school for officers.

Lowry AFB, Colorado.
3415th Tech. Tng. Wg.
Officers school in Aerial Photography
Armament and Turrets
Budget and Fiscal
Classification and Assgmt.
Intelligence
Photo Interpreter
Statistical Control
Supply
E M School Supply
Armament

Sheppard AFB, Texas.
Engine Mechanics School.
$43. total cost of base.
3750th Tech. Tng. Wg.

Fort F. E. Warren AFB, Wyoming.

Amarillo AFB, Texas.
Under construction. Total cost will be $36 million.
To be Engine Mechanics School.

Indoctrination Bases.

Lackland AFB, Texas.
3700th WAF Tng. Gp.

Sampson AFB, New York.
CG, Brig. Gen. Norris B. Harbold.

10. AIR PROVING GROUND COMMAND

The Air Proving Ground has headquarters at Eglin AFB, Valpariso, Florida, and is commanded by Maj. Gen. Bryant L. Boatner. Eglin covers over 500,000 acres and has extensive facilities for testing virtually any piece of AF equipment under simulated combat conditions. Not only equipment, but techniques and procedures are tested and criticized by the 10,000 men who run the proving ground, matters as diverse as the sub-zero performance of the F-86, the efficiency of electric timepieces and the proper technique for blind, bad-weather fighter interception of attacking bombers. (Flying, May 1951, p. 96).

In February 1950, the 550th Guided Missile Wing was stationed at Eglin (81:2 House Appropriations Committee, Def. Approp., Pt. 3, p. 1390), but since that time Guided Missiles have been turned over to the Air Research and Development Command and this unit may have moved either to Patrick AFB or to Holloman AFB or perhaps it remains at Eglin as an isolated ARDC unit.

12. SPECIAL WEAPONS COMMAND

Headquarters are at Kirtland AFB, Albuquerque, New Mexico.

Commanding General, Brig. Gen. John S. Mills.

SWC has as its primary mission the handling of the atomic bomb. It works in close cooperation with the AEC installations in New Mexico and is the sole Air Force representative in the atomic program. Close liaison is of course maintained with Strategic Air Command and Air Matériel Command, as other interested parties in the supply and use of atomic weapons, but SWC is charged with the testing of sighting equipment, figuring the trail and other pertinent data for the trajectory of the atomic bomb, and checking out the planes and crews who will drop the bombs. SWC is evidently more security conscious than any other command, for almost no real information about its units and its operations has been published. An article in Flying for May 1951 contains virtually all that is publicly known about this command.

The 4930th Test Spt. Group is stationed at Kirtland, and the base at Sandia Base, New Mexico, is also under the command of SWC. Headquarters Command maintains two Sp. Rept. Groups at Sandia Base, the 1097th and the 1100th.

C

MAJOR COMMANDS:

Overseas

1. FAR EASTERN AIR COMMAND

CG, Lt. Gen. Otto T. Weyland.

Vice-Commander, Maj. Gen. Lawrence C. Craigie.

CG, FEAF Bomber Command, BG Robert H. Terrill.

The Command includes 5th Air Force (Japan and Korea), 20th Air Force (Japan and Okinawa) and 13th Air Force (Philippines). Its operations are supported by Combat Cargo Command, Hq., Ashiya AFB, Kyushu. Total personnel July 1951, 60,000.

The Command has carried on over a year of air operations in the Korean theater. Summary of operations since the beginning of hostilities to June 20, 1951, is as follows:

Sortíes flown, 223,000

Tons of bombs dropped, 97,000

Gallons of napalm dropped, 7,800,000

Rounds of ammunition expended, 98,000,000

Rockets expended, 264,000

Tons of freight flown, 176,000

Passengers flown, 427,000

Casualties inflicted on enemy troops, 120,000

Gun positions silenced, 2,700

Major strategic targets neutralized, 18

Tanks destroyed or damaged, 1,695

Motor vehicles destroyed or damaged, 24,500

Highways and rail bridges destroyed or damaged, 1,080

Buildings destroyed or damaged, 125,000

Enemy aircraft destroyed, probably destroyed, and damaged, 391

Aircraft lost, 246

Personnel casualties, 857

According to estimates based on POW interrogations, 47% of all enemy casualties were inflicted by FEAF.

Impressive as this record is, it must be balanced against the fact of complete mastery of the air in the theater, and the low fire-power of enemy infantry. It is doubtful if napalm bombing, for example, which requires extremely low altitude approach, could successfully be used against troops equipped with large numbers of automatic weapons.

As for strategic bombing, FEAF destroyed the 18 strategic targets located in Korea in the first few months of the war, and since that time Bomber Command FEAF has had to confine its operations to interdiction and troop support.

For discussion of the activities of Combat Cargo Command, which are an extremely important part of Korean operations, see MATS.

5th Air Force.

Hq., Nagoya AFB, Honshu.

CG, Maj. Gen. Frank E. Everest.

Deputy CG, Maj. Gen. Edward T. Timberlake.

Unites under this command include:

314th Air Division, Johnson AFB, Tokyo, Japan. APO 710, SF.
CO. Col. Thomas B. Hall.
Contains 6163rd Air Base Wing.

3rd Bomb. Wing (L)
Contins 3rd Bomb. Gp. - 2 squadrons of B-26s, night intruder missions.

422nd Bomb Wing (L), S. Japan.
CO, Col. Brooks A. Lowhon.
B-26s.
Flew 50th mission in April 1951.

4th Fighter-Interceptor Wing. Kimpo AB, Korea.
F-86s.
Col. Francis S. Gabreski.
Group Com., Lt. Col. Glenn F. Eaglestron.

51st Fighter-Interceptor Wing.
F-80s.
Col. John W. Weltman, CO.

...th Fighter-Interceptor Wing
F-51s.

SECRET

18th Fighter-Bomber Wing. APO 970.
F-51s.
Contains 65th Fighter-Bomber Squadron.

49th Fighter-Bomber Wing.
F-80s.

8th Fighter-Bomber Wing.
F-80s.

136th Fighter-Bomber Wing.
F-84s.
Contains 522nd Fighter Squadron.
Lt. Col. J. B. MacDonald

116th Fighter-Bomber Wing.
F-84s.
Arrived in Japan in August.

17th Fighter-Escort Wing.
F-84Es.

67th Tac Recon. Wing.
F-51s.

543rd Tac. Recon. Gp.
F-80, RF-80, RF-51

67th All-weather Squadron
F-82s,

1808th Air Weather Wing, Japan.
WB-29.

6131st Tac. Support Wing
F-51s.

20th Weather Squadron, Nagoya AFB. (2143rd Air Weather Wing)

20th Air Force.

Hq., Kadena AFB, Okinawa.

CG, Maj. Gen. Ralph F. Stearley.

Units include:

19th Bomb. Wing (M), Okinawa.
B-29.
CO, Col. Robert G. Wimsatt

336

SECRET

98th Bomb Wing (M), Japan.
B-29.

307th Bomb Wing, (M) Japan
B-29.

91st Strat. Recon. Sq.
RB-26.

15th Weather Squadron, Okinawa (2143rd Air Weather Wing)

6332nd Med. Gp. APO 239-1 (6332 Air Base Wing)

529th AC & W Gp., Naha. APO 239.

6351st Air Base Wing, Naha.

1811th AACS, Kadena.

595th AF Band, APO 231.

97th AAC Group (Army)

Combat Cargo Command.
Hq. Ashiya AFB, Kyushu. APO 959.

315th Air Division.
Hq. Itazuki, Kyushu.

314th Troop Carrier Wing.
C-119.
Contains 21st and 46th squadrons.

374th Troop Carrier Wing. Near Tokyo.
C-54.

437th Troop Carrier Wing. Near Tokyo.
C-46.

812th Avn. Eng. Squadron.

Japanese Bases. Tachikawa, Brady, Ashiya, Itazuki.

13th Air Force.

Hq., Clark AFB, Philippines (near Manila). APO 74.

CG, Maj. Gen. H. M. Turner.

Vice Commander, Dache M. Reeves

18th Med. Gp.

FEAMC

Hq. and Hq. Sq. APO 323.

Tachikawa.

6403rd Pers. Processing Sq. APO 959.

13th Med. Gp. (Dep). APO 323-2. Tachikawa.

MATS Units

1503rd Air Transport Wing, Haneda, Honshu. APO 226.

1808th AACS Wing. APO 925.

30th Weather Squadron. APO 970.

1500th Air Transport Wing. APO 953.

FEAF Units not identified as assigned to specific Air Force or Command:

Reconnaissance

162nd Tac. Recon. Sq.

45th Tac. Recon. Sq.
RB-26

[? 605th Tac. Con. Sq. APO 970]

Medical

1st Med. Sq. APO 925.

6001 " " APO 709.

27th Med. Gp. SAC. APO 929.

6163re Med. Gp. APO 719.

51st Med. Gp. APO 235.

Maintenance

6163rd Air Base Wing. Misawa, Honshu.
Col. Jack S. Jenkins.

13th Tech. Supply Sq.

Air Evac.

1453rd Med. Air Evac. Sq. APO 953.

801st " " " "

SECRET

Rescue

3rd Rescue Sq.
H-5s and H-19s

1973rd AACS (Japan)

20th Weather Squadron, Nagoya.

811th Eng. Avn. Batt. Kagoshima, Kyushu. APO 970.

6148th Air Base Group, Korea.

934th Sign. Batt (Sep) TAC, FEAF. APO 970.

2. UNITED STATES AIR FORCES EUROPE

USAFE has assumed increasing importance as the defense of Western Europe began to appear critical, as the North Atlantic Pact was negotiated, as the North Atlantic Treaty Organization has begun to function, and as a Supreme Headquarters, Allied Powers in Europe, has begun the work of integrating the military strength of the treaty nations.

As a part of the reorganization that accompanied the establishment of SHAPE, sole major AF command on the eastern side of the Atlantic was given to USAFE on 22 January 1951. In this role, it is charged with the double task of 1) promoting the unity of the 12 air arms of the NATO signatories, and 2) serving as the principal instrument of air power against a Soviet attempt to overrun the Continent. To fulfil these functions USAFE has been made the largest American Air Force outside the United States, except for the force now fighting in Korea.

Cooperation with NATO forces has been promoted by the shipment of F-80s and B-29s to Atlantic Pact countries, and it is expected that F-84Es will be shipped to Holland, Denmark and France. Cooperation is also fostered by consultation and by exchange of personnel, and even more by joint maneuvers. For instance, Norwegians have participated as observers in U.S. war games, and USAFE forces have had a part in Norwegian exercises. Similarly, in 1950, during the French combined maneuvers, USAFE troop carriers transported French paratroopers on practice jumps. Furthermore, Lt. Gen. Loris Norstad, CO of USAFE is also Commander, under SHAPE, of the Allied Air Forces in Central Europe, and he has announced a staff which includes Gen. Pierre Fay of France at Central Headquarters, Air Vice Marshall Thomas Pike of Great Britain as Deputy C of S., and other officers from Belgium, Canada and elsewhere in other staff positions.

 340

This cooperation, however, is only a beginning, as was plainly shown by maneuvers in May, 1951, in which United States, British, French, Dutch, Belgian and Danish forces participated. These exercises revealed need for a wider network of bases (eleven bases were used, of which only two were in France) and for an independent system of communications, as defense is at present almost wholly dependent upon civil communications.

The strength of the American Air Force itself, in Europe, is conspicuously low in terms of the responsibilities which USAFE would be expected to shoulder in the event of war. Fighter capacity, especially, has been almost negligible, and in June, a conference was held in Paris to discuss the increase of strength, especially in fighters. Some reports say that the USAF may later place one-third of its total strength in Europe, but this development is not near. Meanwhile, strength on the Continent consists of only two fighter-bomber wings and two troop carrier wings, all operating from bases so deep in Bavaria that it is unlikely that they could be kept operational for more than two or three days in the event of a Russian attack.

The position in Great Britain is somewhat better. There the strategic units of USAFE are based, under the command of the Third Air Force. It includes the 59th Depot Wing, a number of housekeeping echelons, and three or more bombardment groups which are rotated regularly.

Recent acquisition of airfields in North Africa, negotiation for airfields in Spain, and appropriations for overseas bases of undisclosed location indicate that the Air Force is preparing to build up its European strength as rapidly as it can, but at present the deficiencies are conspicuous.

Hq., Wiesbaden, Germany.

CG, Allied Air Forces, Lt. Gen. Lauris Norstad.

SECRET

12th Air Force, Hq. Wiesbaden.
CG, Maj. Gen. Dean C. Struthers.
C/S, Col. "Hub" Zembke.

2nd Air Division, Landsberg, Bavaria.
CO, Brig. Gen. Lawrence C. Darcy.

36th Fighter-Bomber Wg., Hq., Furstenfeldruck, Bavaria.
CO, Col. Robert L. Scott, Jr.
Three fully equipped F-84E fighter bomber squadrons.
See note under 86th wing.

86th Fighter-Bomber Wing, Hq., Neuberg, Bavaria.
CO, Col. John C. Chennault.

180 F-84Es were ferried over to these wings in November 1950 by the 27th Fighter Wing from Bergstrom AFB, Texas. These two units have a program of constant training. The 36th Wing flew a total of 4100 hours during May,1951. Personnel from the Air Forces of various other NATO countries have trained with them.

Other units of this division include the 501st Aircraft Control and Warning Group, the 7030 Hq. Support Group.

Units under 12th AF but not in 2nd Air Division.

60th Troop Carrier Wg., Hq., Wiesbaden.
CO, Col. James J. Roberts, Jr.

61st Troop Carrier Wg., Hq. Rhein-Main Air Base
CO, Col. A. C. Strickland.
Three fully equipped squadrons of C-82A's.
Has exercises with French paratroopers.

433rd Troop Carrier Wg.,
CO, Col. Harry Hopp.
Just going to Europe. A Reserve unit from Cleveland,Ohio. Equipped with 45 to 48 C-119s; 1500 officers and men in this unit.

85th Air Depot Wg., Hq., Erding, Bavaria.
CO, Col. Park Holland.
Repair and maintenance all USAF aircraft in Germany and Austria.
A very large base.

Other units include the 7167th Special Air Missions Sqdn., the 7th Air Rescue Sqdn., the 7100th Hdqrs. Support Wing.

SECRET

3rd Air Force, Hq., South Ruislip, Middlesex.
CG, Maj. Gen. Leon W. Johnson.

Maintains facilities and bases necessary for the continuous support of strategic forces which are rotated at 90-day intervals. Usually three medium bomber groups and one fighter escort group are based in England. For instance, the 93rd Bomb. Wg. (B-29s) was there in 1950, and they are now back in the U.S. Their practice missions sometimes went as far as Saudi Arabia and back.

In July, 1951, the 31st Ftr. Wg., Col. David Schilling, CO, finished six months training in England and returned to the Z.I. Their place is being taken by the 12th Ftr. Escort Wg., now being flown to U.K.

Also, a B-50 wing is now on temporary duty there. The strength is kept at one bomb wing (45-50 bombers), one fighter wing (usually F-84Es), in addition to 20 converted B-29 refueling planes and half a dozen RB-45 recon. bombers (soon to be replaced by British Canberras).

It appears that there may be as many as fourteen airfields and five other installations in Britain, though estimates of the number have run considerably below this figure (five, Herald Tribune, 25 June, and four new bases being opened, ibid., 7 June; 7, Newsweek, 25 June; twelve, New York Times, 7 May). USAF has bases in East Anglia which it occupied during World War II, namely Sculthorpe and Marham in Norfolk, and Lakenheath and Mildenhall in Suffolk. Other bases, the majority of which are new, include Waddington in Lincolnshire, Wyton in Huntingdon, Bovingdon and Bassingham in Hertfordshire, Chicksand in Bedfordshire, Upper Heyford and Brize Norton in Oxfordshire (both new), Fairford in Gloucestershire (new), Newbury in Berkshire, and Manston in Kent (escort fighter). In addition to these bases, there is a Headquarters installation at South Ruislip, Middlesex, a medical installation at Blandford, Dorset, two AAA

battalions at Norton Barracks, Worcester, and supply bases at Seland, Flintshire, and Burtonwood Depot, Lancashire - the latter a very large-scale repair and maintenance unit.

The number of personnel in the United Kingdom is undoubtedly being increased. Approximately 20,000 airmen were there as of 7 June, which figure probably includes some 3,000 in the temporary rotational wings.

The 20th fighter-bomber group and the 7512th Air Support Group are are at Manston, Kent.

The 59th Air Depot Wing is at Burtonwood and the 30th Air Depot Wing is at Sealand, Flintshire.

The 32nd AAA Brigade and 60th AAA Battalion are at Norton Barracks, Worcester.

Southern Europe.

Plans are being made to increase our strength in the Mediterranean. A still undesignated Air Force is envisioned for North Africa. It would logically be under the command of Maj. Gen. David M. Schlatter, CG, Allied AF, Southern Europe. Contracts have been let to the Morrison, Knudsen Construction Co. for building five air strips in North Africa. Wheelus Field, Tripoli, an MATS base, is at present our only field along the African coast.

ECA funds are being used to build and improve airfields in Greece and its outlying islands. They are ostensibly for the use of the Greek airlines, but they are being made to military specifications. Timbaki Field, Crete, will have a good 10,000 ft. runway, and other improvements are being made at Herakleion Field, Crete; Kastelli, Crete; Mytilene, Lesbos; Mertisa, Rhodes; Mikra Field, Salonika, Greece; Sedes Field, Salonika;

 344

Hellikon Field, Athens; Araxos, Southern Greece; and at one unnamed place on the island of Corfu. The U. S. is also attempting to have the British improve the air facilities on Cyprus.

SECRET

345

Alaskan Air Command

C.O. Maj. Gen. William D. Old

Hq and Hq Squadron APO 942 Seattle **SECRET**

Elmendorf AFB APO 942 Seattle

10th Air Division (Defense)

C.O. Col. James L. Bryan

Co-ordinates defense system of southern Alaska

Contains

531st Aircraft Control and Warning Group

867th Anti-Aircraft Automatic Weapons Battalion } ARMY
95th " " " " " }

39th Air Depot Wing

C.O. B.G. Walter R. Agee

contains

57th Fighter Interceptor Group

(64th, 65th, and 66th Squadrons. F-80's probably being replaced by F-94's)

39th Maintenance Group

39th Supply Group

39th Air Base Group

39th Medical Group

5039th Transportation Group

(54th Troop Carrier Squadron

5039th Base Flight Squadron

5039th Air Support Squadron)

(Function of 5039th Air Support Squadron is the

[illegible] the Aleutian chain.)

344
346

SECRET

Also at Elmendorf

59th AACS Group

925th Engineer Aviation Gp.

813th " " "

1804th AACS Gp. MATS

10th Air Rescue Squadron MATS C.O. Col. Bernt Balchen

5005th Hospital Group

27th Statistical Service Unit

LADD AFB APO 731

11th Air Division (Defense) has direct operational control over elements of defense in northern Alaska.

C.O. Lt. Col. William M. Bowden

5001 Composite Wing. C.O. B.G. Donald B. Smith

(5001 Medical Group
5001 Survival Squadron
5001 Air Base Group)

Arctic Aeromedical Laboratory

Eielson AFB APO 937 C.O. Col. Edward Moore

375th Weather Reconnaissance Squadron. B-29's. MATS

(has made more than 375 flights over North Pole)

regularly scheduled flights between Eielson and Yokota, Japan.

SECRET

348
347

5010 Composite Wing. C.O. B.G. David H. Barker

(5010 Maintenance Sq.)

SECRET

(5010 Sup. Sq.)

807th Engineer Aviation Gp.

Aleutian stations

Nakeek AFB

Shemya AFB - AACS unit

Thornbrough AFB

Cape AFB

Amchitka AFB

A communications station to be built at Kenai

(cost $7,000,000)

Canadian-U.S. Weather station at Mould Bay on Prince Patrick Island.

GCA units at Shemya, Adak and Cold Bay.

SECRET

349
348

Northeastern Air Command

Hq. and Hq. Squadron - Pepperell AFB.

SECRET

St. John's, Newfoundland. APO 682 c/o PM, NY.

C.O., Major-General L. P. Whitten.

Deputy C.O., Colonel J. F. Whitely.

Mission. Defense of North American continent, maintenance of bases needed for transatlantic flights, maintenance of weather stations. "Area of responsibility" includes Quebec, N.W. Territory, Labrador, Newfoundland and Greenland.

Bases.

Pepperell AFB, St. John's, Newfoundland. C-54s.

Ernest Harmon AFB, Stephenville, Newfoundland. 6th Rescue Squadron.

McAndrews AFB, Argentia, Newfoundland.

A base on the S.W. coast of Greenland.

Stations

Artic Indoctrination School, Goose Bay, Labrador.

Weather stations manned jointly by US-Canadian personnel.

Mould Bay, Prince Patrick Island.

Isaachsen, Isaachsen Island.

Alert, Ellesmere Island

Eureka, Ellesmere Island.

345
349

SECRET

5. CARIBBEAN AIR COMMAND

Hq., Albrook AFB, Canal Zone.

CG , Brig. Gen. Emil C. Kiel.

This command includes only one active base, Albrook, outside Balboa. It is equipped to handle tactical units flown from the states in an emergency. As of 9 June 1951, the 23rd Ftr. Gp. was stationed in the Canal Zone. Also, the 1st Air Rescue Squadron of MATS is stationed here. The command has been running a school this summer for 165 South American students from the Air Forces of several countries.

350

SECRET

SUBSECTION III

AIRCRAFT

351

SECRET

A

AIRCRAFT INVENTORY

AIRCRAFT

A.

SECRET

Inventory

The present (1 Sept. 1951) inventory of AF aircraft was stated (August) to be 13,500 units. Even this figure provides a false sense of security since probably no more than 6,000 (5,705) a/c at the outside are first-line, modern models. The reduction of Symington's (March 1950) projected inventory for 1 July 1951 of 21,000 a/c to 13,500 is more realistic, yet even this figure includes 7,500 or more a/c many of which are scheduled to become obsolete 1 July 1952. Furthermore, since only combat types provide a valid estimate of AF Military capabilities (necessary and useful as non-combat a/c are), the number of bombers, fighters, and reconnaissance a/c (1 Sept. 1951) of first-line quality is only about 5,000 at most.

The conspicuous use in Korea of B-26's, B-29's, and F-51's indicates both the lack of a sufficient number of modern a/c and an unwillingness to risk the present limited supply - though F-80's, F-84's, and F-86's are reported in action. The scheduled retirement as obsolete on 1 July 1951 of the B-29 has been postponed. Although this model has held its own against Koreans and Chinamen, its achievement (beyond bombing pack-animals, warehouses, railroads, ground troops and other fixed targets) is hard to estimate. An admitted loss of 246 a/c (188 fighters, 33 bombers) to 20 June 1951 and (chiefly to ground-fire) stands against a claim of 319 enemy a/c destroyed and 391 destroyed or damaged; but Hanson Baldwin recommends halving AF claims of enemy losses on the basis of World War II experience.

In the case of Fighter a/c, an accurate estimate of planes built within the technical "lifetime" (3 years) is difficult to make with preci-

sion. Of the 4,652 Fighters (excluding F-47 and F-51) given in the

353

inventory by types (Table III), 4,067 have jet power plants; but how many of the 1,727 F-80's were built before 1 July 1948 has not been ascertained (a guess of 500 is used). The total number of jet-engined Fighters is probably no more than 3,500 - if that many.

SECRET

The significance of this inventory of about 600 first-line bombers and 3,500 fighters is meaningful only by comparison to the quantity of a/c of comparable quality in the air force of a first-rate power; or to the number of a/c required by USAF's own requirements for a 48-70-87-95(N-1) or 150 Wing U.S. Air Force. Russia's alleged production rate of "8,500 military front line planes a year" (250 bombers, 6,000 fighters, 2,250 transports, trainers, etc.) means that Russia will have produced in a year 1/3 the number of USAF modern bombers now in being and more than the USAF's total number of first-line fighters.

Against its own goals, the equipment prescribed for the 70 Wing AF (as proposed 10 Feb., 1949) would require(1):

70 Wing Air Force		Available Sept. 1951
Heavy Bombers	72	93
Medium Bombers	480	522[+B-29s]
Strategic Reconn.	216	60[+B-29s]
Light Bombers	240	B-26s
Total Bombers	1,008	675 [+B-26s and B-29s]
Fighters	1,875	
Tactical Reconn.	216	
Total Fighters	2,091	c. 4,000 Jets
Heavy Troop Carriers	144	
Medium " "	288	
Total	432	1,046

(1) No data on the allocation of Wings in the 95 Wing AF is available. Aviation Daily estimates that there will be 40 Strategic Wings, 35 Tactical Wings, and 20 Air Defense Wings; but the typesof Wings and planes are not known. For a 70 Wing AF, see Report of Committee on Armed Services to HR. 10 Feb. 1949. H.R. 1437, Report [illegible] p. 10.

SECRET

Here again, mere numbers are deceptive unless weighed against quality. The obvious shortages of first-line a/c (whether against the 70 Wing proposal, the 57 Wings in being or the 95 Wing goal) are in quality Medium Bombers (100 B-47s), Light Bombers (no first-line until the B-57 is delivered), and in the top-performance fighters (F-89, F-94, F-95). In sum, no matter how the inventory is calculated, the conclusion can not be avoided that the current number of 4,000-5,000 first-line combat a/c falls short of enough to justify the AF, or the U.S. Government, in undertaking an aggressive war at present. Nor does the estimate of 4,000 jet fighters seem enough to justify any desire by the AF to enter upon a "defensive" war against an air force equipped with 6,000 fighters produced within the past [or next?] 12 months.

The 1,046 Troop Carriers and Transports seem adequate for present requirements. They are essential for land, sea, and air warfare, but they are not effectual against enemy fighters. The estimate of c. 1,000 trainers may be low because of current production, but even 1,500 would seem too few to train the personnel needed for the 95 Wing AF. The use of F-47s, F-51s, B-26s and C-47s by the ANG and Air Reserve again confirms the conclusion that the current inventory is inadequate for present, let alone war-time, needs. The next 6-12 months' production may do a little to redress the unfavorable balance. The most effective Bomber, the B-47, is in full production and even if the 100 units estimated for 1 Sept. 1951 is too high, that number should soon be built. Disappointment in the B-36, by AF officers and officials has been openly expressed, and the AF now seems to be banking on the B-47. Also, Martin is licensed to make the English Electric Co's Canberra (B-57A) light bombers. Concern over the quality

of jet engines has led Republic to use in F-84Fs the British Sapphire being built in the U.S. by Wright Aeronautical Corp. and Buick Div. of General Motors. At best, existing inventories contain equipment for a "peace-time" air force, and current production reflects poetntiality more than a capacity adequate to deter an actual aggressor.

SECRET

Table I *

Aircraft Required for full complement of the 78 Combat Wings Identified

Wings		A/C per Wing	Total A/C Required[1]	A/C Available[2]	
		Bombers			
Strat.Recon.	5	30	150	RB-36:	60
				RB-29:	[?90][3]
Heavy Bombers	3	18 [-36]	54 [-108]		93
Med. Bombers	15	45	675	B-45,47,50:	522
				B-29 :	[500-1,000]
Light Bombers	3	48	144	B-26 :	[500-1,000]
Totals	26		1023 [-1077]		675 [+B-26, B-29]
		Fighters			
Tact.Recon.	3	54	162		
Ftr-Escort	2	75	150		
Ftr-Bomber	14	75	1050	Jets:	4067
Ftr	4	75	300	F-82:	585
Ftr-all weather	3	75	225	F-51:	?
Ftr-Interceptr	13	75	975		
Totals	39		2862		4652 [+? F-51s]
		Troop Carriers			
Troop Carriers	13	36-48	468 [-624]		1046[4]
Totals	78		4353 [-4563]		—

SECRET

(1) No allowance is made for Spares.

(2) These figures make no discount for recent Operational and Combat losses, hence are high.

(3) No precise estimate available; the 1500 B-29s permit the conversion to RB-29s of the 90 (or more) needed.

(4) Including cargo a/c.

* After completing this Table a 79th Wing, the FEAF 17th Fighter-Escort Wing was identified. It presumably contains 75 aircraft thereby increasing the total of Fighters required to 2,937 and the total of all aircraft to 4,428 [-4638].

 357

SECRET

Table II

Inventory of Aircraft: Over-all Totals.

1 July 1949

Total a/c:			22,000
a/c in use:	13,000		
a/c inactive	9,000	[7,500 in storage]	
	22,000		
Types			
Combat:	10,250		
WW II	8,246	[Obsolete 1 July 1951]	
"Modern"	2,004	[Not obsolete 1 July 1951]	
Trainers, transports, etc.	11,750	[WW II Types Obsolete July 1952]	
	22,000		

31 December 1949

Total: 1 July:	22,000
Delivered 1 July-31 Dec.	783
Total a/c	22,783(1)

45% = "First line" a/c 10,252 of which

50% = "Modern Quality" 5,121 For 48 group AF

(1) No deduction for Obsolete Non-Combat a/c retired July-Dec.

July 1950

8,300 a/c in Storage: including c. 1000 B-29

1 July 1941
(Estimated by Symington 24 March 1950)

Total	21,000
25% = "Modern"	5,250 (Symington: 5,700 modern a/c)
48 group Quality	5,200

SECRET

Check Estimate: No. 1

Combat Types { In Being July 1949 / Not Obsolete July 1951 }	2,004
Deliveries (all Types) scheduled FY 49/50	1,792
" " " FY 50/51	1,372
	5,168

SECRET

Check Estimate: No. 2

Combat Types [July 49-July 51]	2,004
Deliveries scheduled FY 49/50	1,792
A/C in Being 1 July 1950	3,796
AF % of FY 50/51 Production:	1,909
Modern A/C in Being Not Obsolete 1 July 1951:	5,705

Summary Estimate of Total Inventory, 1 July 1951

Modern A/C in Being, Not obsolete:		5,705 (1)
Add: Non-Combat Types (obsolete 1 July, 1950- 1 July, 1952)		11,750 (2)
Total: A/C all types		17,455
Deduct: Korean Losses (246 to 20 June '51)	246	
Operational Losses (Guess)	209	455
Total Inventory 1 July 1951		17,000
Cf. AF Testimony in Congress, Aug.1951 (2)		13,500
Non-Combat types retired 1 July 1949- 1 July 1951 (Est.)		3,500

(1) "Modern" Combat types probably number less than 5,000 (5,705 minus Non-Combat types delivered since 1 July 1948). Cf. below, Estimate of A/C by types, as of 1 Sept. 1951 (Bombers, 675 + Jet Ftrs, 4,067, total: 4,742 Modern A/C.

(2) Of the 11,750 A/C (described as W.W.II Non-Combat Types to become Obsolete by 1 July 1952), many (perhaps 3,500) may have been retired by 1 July, 1951. No deduction thereof is made here, but this probably explains the comparatively low figure, 13,500 A/C, stated by the AF in August as current inventory. American Aviation Daily, 24 Aug. 1951, p. 354. The difference between the 13,500 inventory and Symington's estimate (March 1950) for 1 July 1951 of 21,000 may result from the elimination of 6,246 WW II combat and 3,500 Non-Combat a/c. However, many a/c have been removed from storage and put into

SECRET

Note 2 - cont.

condition, for example, 1722 are being "removed from storage during FY 1951/52;" and 250 B-29s (which in March 1950 were scheduled to become obsolete 1 July 1951) currently are being withdrawn from storage and reconditioned. Congressional Hearings, 82:1, House Appropriations Committee, AF Approp. FY 1951/52, pp. 382, 89.

SECRET

Table III

Inventory of Aircraft: By Types, 1 Sept. 1951

N.D. No Deduction for Korean Losses (Combat 246, Operational 62) nor for domestic Operational Losses is made.

Bombers

B-26 (Old A-26): 2,502 made by Aug. 1945
B-29 4,221 made by May 1946 (1)

B-36	153
B-45 (2)	200
B-47	100
B-50	222
XB-51	2
B-52 (3)	0
XB-54	0
B-57A (4)	0
B-58	0
YB-60	0
Total: 1st Line	677 A/C
KB-29 Tankers	200
Total	877 A/C

Cf. Bombers required for 26 Bomber Wings identified: 1023 -1077
Note: Reported Korean Losses of 33 Bombers were probably B-26s and B-29s, for the most part, so no deduction has been made from the estimate of "modern" bombers. No allowance is made for spares.

(1) In Aug. 1946 there were "on hand" 3,040 B-29s; later 1,000 B-29s were in storage; and the 44 group AF of Feb. 1950 included 318 B-29s; in July 1951, 250 B-29s were removed from storage; (perhaps 250(?) between July 1950 and July 1951); 153 B-29s are required to equip the 15 Medium Bomber Wings identified in addition to the 522 B-45s, B-47s, and B-50s.

(2) 14 B-45s were converted to Target Tugs.

(3) 100 B-52s on order. Delivery at end 1951.

(4) B-57A is in production.

SECRET

 360

Fighters

F-47: 543 in A.N.G., Aug. 1950. Very Obsolete.

F-51: 15,302 made; 926 in ANG, Aug. 1950. Obsolete. In use in Korea.

F-80:	1727
F-82:	585
F-84:	1000(1)
F-86:	800
F-89:	130(2)
F-94:	210
F-95:	200
Total:	4,652

SECRET

Cf. Fighters required for 39 Fighter Wings identified: 2,862

Note: No spares are included and the ratio of a/c available to a/c required is less than 2 to 1 (23:14).

Summary of Combat A/C: First-line modern

Bombers:	677			
Fighters:	3,923	4,652	Minus: Korea Ftr. Losses	188
			Obsolete F-80s made before 1 Sept. 1948	500(?)
			Operational Losses Z.I.	41(?)
		729		729
		3,923		

Total: 4,600 First-line Combat A/C probably available 1 Sept. 1951

Troop Carriers and Transports

C-45 [933 to be re-manufactured Aug. 1951]

C-46 [over 2,000 built to 1946]

C-47 [10,123 built (157 in ANG, Aug. 1950)]

SECRET

C-52	313	C-121A	10
C-74	14	C-121B	10
C-82	220	YC-122	14
C-97	96	XC-123 (1)	1
XC-99	1	C-124	100
C-118B	15	YC-124B	0
C-119	236	C-125	23
XC-120	1	YC-129	0
	Total:		1,054
	Korean Losses:		8
			1,046

(1) Kaiser-Frazer to build this Chase a/c; tested at Southern Pines Exercises 25 Aug. 1951. Perhaps more than 1 is in being.

Trainers

T6: [Old AT-6] 15,117 built by Nov. 1945.

T-6G: [Re-manufactured T-6] 1200 "next year"

TB-25: 10,784 built; 1400 in storage Apr. 1950

SECRET

T-28 and TB-28	566
T-29	76
T-33	320
YT-34	3
YT-35	3
T-36 [300 on order]	
TB-50D	
T-51 [Converted F-51 of which 15,302 built]	
Total	968

Helicopters

H-5	116
H-12	11
H-18	
H-19	5
H-21	130
	262
SA-16	124

SECRET

Bibliographical Note

SECRET

The Inventory is compiled from the Estimates on a/c production 1948-51 (See below B); from Aircraft Industries Association mimeographed reports; from the Aircraft Year Book (1948, 1949, 1950); Jane's, All the World's Aircraft (1947-51) and items in Aviation Week, American Aviation Daily, American Aviation Directory, The Army Almanac, the N. Y. Times and Herald-Tribune, various Congressional Hearings, Dept. of Defense Press Releases, and Moody's and Standard & Poor's publications.

B

AIRCRAFT PRODUCTION

365

B.

Production SECRET

1,106 military aircraft of all types, for all U.S. services, and for export were produced during the first six months of 1948. Since then, no figures of military aircraft actually built have been published. Estimates of military aircraft production have been made by various private organizations, Aircraft Industries Association, American Aviation Publications, Aviation Week and less reliable conjecturers. Various methods of calculation have been employed: Procurement appropriations - in total or by aircraft types - divided by unit costs (estimates in themselves); airframe weight divided by that of the "average" (a non-existent) plane; projections of production rates per month from an estimated base. In sum, each procedure is highly conjectural and the first two probably fallacious since the unit cost (let alone the "average" cost) is known to be rising, which makes it a mathematical variable; and airframe weight has increased and decreased per year for even the "average" plane - Douglas, for example, made 246 aircraft of 7,251,000 lbs. airframe weight in 1950 and 289 aircraft of only 5,483,000 lbs. in 1949.

In the last analysis, the published results of these and other (cocktail-party gossip) methods of estimating recent military aircraft production generally can be traced back to one or two "facts" to be found in the printed reports of Congressional Committee Hearings on Appropriations, Armed Services, Foreign Affairs, and (with very few facts) McArthur's removal. From a few data (generally so incomplete or containing so many mathematical "unknowns" that any scientific calculation is impossible) "estimates" have been made.

SECRET However, the conclusions are reached in this study, that a total of 2,300 military aircraft for all U.S. services and MDAP were built in Calendar 1948; 2,500 in Calendar 1949; 2,700 [-3,000] in 1950; and 2,660 in 8 months of 1951; and that 1,800 aircraft were produced for the A.F. alone during Fiscal Year 1949/50 and 2,000 for the A.F. alone in Fiscal Year 1950/51. These estimates have the single virtue of surviving several kinds of rule-of-thumb "checks." Although these "checks" may be arguing in circles from the same few basic "facts," they suggest strongly that the estimates are within a few hundreds, certainly within 20-25% of being correct. Furthermore, the annual variation in the estimates for Calendar Years 1948-50 inclusive seem compatible with company earnings, backlogs, unfilled orders, new contracts, and the "general impression" (as evidenced by the comments of Congressmen and Air Force Secretaries and Officers at Committee Hearings). Then for Calendar 1950, markedly increased procurement appropriations, supplemental appropriations, aircraft manufacturing companies' dollar sales, airframe weight volume, earnings, dividends, new contracts, bank loans, unfilled orders, and backlogs all testify to a presumably rapidly accelerated rate of production.

Estimates of the increase in production since June 1950, given below in Table III, are based on a supposed total production of 200 military aircraft for June 1950.(1) To this base, is applied Charles E. Wilson's statement that the rate of military aircraft production in June 1951 increased by 2/3 [estimates made previously by applying the "rule of 3" to June 1950's 200 aircraft rate proved hopelessly extravagant]. The "Rule of 3," according to Wilson (2nd Report, July 1951), should apply for Fiscal Year 1951/52 which

Note 1. No positive evidence has been found to prove the accuracy of this figure. It comes from an Aircraft Industries Association estimate, presumably deduced from airframe weight for the month. It is below the average (216) monthly rate for the 2,600 aircraft estimated as produced during FY 1949/50.

would mean a total production for Fiscal Year 1951/52 of 8,322 aircraft of which the A.F.'s quota might be 5,000-6,000 aircraft of all types. With all the variables and unknowns that enter into the calculations of production in the tables below, the estimates for the years 1948-1951-plus inspire more confidence than any to be conjectured after 1 January 1952 are likely to do.

SECRET The estimates of production of individual types of military aircraft [Table VII] are both more and less reliable than the estimates of over-all total production. In a few instances, remarks by government or A.F. officials in positions enabling them to know the facts and to speak accurately provide a seemingly sound factual base for calculations. The statement (at a Congressional Hearing) in July 1951 that 87 B-36s are ready, that 60 more are being converted to B-36Ds (RB-36s ?), and that only 2 or 3 are being delivered each month, support the estimate of 153 B-36s in-being on 1 September 1951. Likewise, the Secretary of Defense's remark that a B-47 costs 3 million dollars per unit affords an estimate of 100 aircraft "on order" against the original Procurement Appropriation for Fiscal Year 1950. However, the conclusion that 100 will have been produced by 1 September 1951 rests on a "hunch" based on the A.F.'s enthusiasm for the B-47, their disappointment with the B-36, the voting of Supplemental Appropriations for Fiscal Year 1950/51, the A.F.'s need for a first-line bomber in quantity, the production of 15 B-47s in 1950, Boeing's past record with B-29s, and Douglas Aircraft Co.'s activation, early in 1951, of its Tulsa plant to build B-47s. However, the Tulsa plant requires 6-12 months for installations and tooling, so no aircraft are likely to be delivered before 1952.

Production of fighter aircraft is more difficult to estimate since unit costs range from a conjectured $118,000 to $1,200,000 for different types, at different stages of production, and according to the kind and cost of elec-

tronic equipment installed. Here again, the 18 months "lead time" for fighters, like the 24 months for bombers, between placing the order and the first delivery (with allowance for acceleration prompted by the Korean War) proved useful as a rough check against extravagant conjectures.(N2)

Crude as the estimates by type are, and inaccurate as some (mere guesses) may be, the total number of bombers, 398, built 1948-1951 [1 Sept.] inclusive and of fighters, 2,925, provide a fairly valid basis on which to estimate current A.F. combat capabilities. Even if the estimates should be 30% out (either way), they measure the approximate force, augmented by the 1500 [600-2400] atomic bombs of various potencies, that an enemy air force must overcome. After all, the current capabilities (and perhaps the immediate aircraft production potentialities) measured in bombers and fighters (and not helicopters, transports, and trainers) are what may decide an enemy whether and when to risk a war against the U.S.A. But the quality of the aircraft, as exhibited below (C) in the performance data, and the geo-political deployment (IV, A and B) of the A.F. must be included in any over-all estimate of the A.F.'s combat value.

Bibliographical Note

Basic data comes from various Congressional Committee Hearings; data on 1948 and 1949 production by types from material provided by Aircraft Industries Association. The Department of Defense Press Releases provided specific items, as have American Aviation Daily, Aviation Week (N.B. Feb. 25, 1950 and Feb. 26, 1951), Jane's All the World's Aircraft (1948-51), Aircraft Year Book

---

Note 2. Current lead times in weeks are: airframes, 43-65; engines 70-90; electronics 70-80; armament 70-80 (Aviation Daily, 24 August 1951). Little reduction over the 18 month (72-78 weeks) lead time may be anticipated at present, and several bottlenecks still exist.

(1946-50). Very few data concerning production have come from the N.Y. Times and Herald Tribune. Material of value, notably actual production figures for Douglas Aircraft Co., appears in Moody's and Standard and Poor's publications.

SECRET

AIRCRAFT PRODUCTION

Table I

Totals of All Types

SECRET

Calendar	Total (A.F., Naval, Army, MDAP) Military Aircraft Production Calendar Years
1946	1669 Actual
1947	2100 Actual
1948	2300 Estimated (Estimates AIA = 2200-2400)
1949	2500 " (" " = 2400-2700)
1950	2700 -[3000] Estimated [Rate Dec. 1950 = 266 or 287 per month = 3192 or 3464 per year] (N1)
1951	4990 Estimated [Rate Dec. 1951 = 666 per month = 7922 per year.
1952-to June 30	5160 Estimated [Rate June 1952 = 1000 per month = 12,000 per year.

N. 1. 266 = Calculated from Base of 200 a/c in June 1950;

287 = from 215 a/c June 1950.

Total Air Force and Navy Aircraft on Procurement during Fiscal Years

Fiscal 1949/50	1250 Aircraft for A.F. plus Navy 798 = 2,048
" 1950/51	7574 " " " " " 5,180 (N1) = 12,754

cf. 7483 at Average Cost $976,000 per a/c.

N. 1. Estimated from Average Cost ($575,000) per plane and probably too high since in August 1951, $900,000 per unit is given for Navy a/c.

Total Air Force and Navy Aircraft Scheduled for Delivery as per General Kessler, 10 Feb. 1950

Fiscal 1949/50	Scheduled for Delivery AF 1792 plus Navy 997 = 2789 a/c
Fiscal 1950/51	" " " " 1372 " " 945 = 2317 (N1)

N. 1. Presumably accelerated after Korea [illegible]. Estimated Production for Fisca[illegible] of 3259 a/c [or 3515 a/c].

SECRET

Table II

Comparative Tables SECRET

	Fiscal Year 1949/50		Fiscal Year 1950/51	
On Procurement :	A.F. 1250	Navy 798	A.F. 7574	Navy 5180 (N1)
Scheduled for Delivery:	A.F. 1792	Navy 997	A.F. 1372 (N2)	Navy 945 (N2)
Estimated Production :	A.F. 1800	Navy 800 (N3)	A.F. 2000 (N4)	Navy 1000 (N4)

Notes: 1) Estimated from total appropriations divided by average cost ($575,000) per unit.

2) As stated on 10 February 1950 (before Korea) by General Kessler at House Committee on Appropriations Hearings and presumably increased in fact during Fiscal Year 1950/51.

3) Based on Average of Estimates by Aircraft Industries Association for Calendar 1949 = 2500, and 1950 = 2700: Fiscal Year 1949/50 = 2600.

4) Based on Estimates (demonstrated below) July 1950 - June 1952, giving Fiscal Year 1950/51 total (A.F., Navy, Army, MDAP) Military Production of 3259 to 3515 and deducting 259 for Army and MDAP (admittedly high for A.F. and Navy). The excess of 628 aircraft estimated as produced during Fiscal Year 1950/51 may be accounted for as the result of the supplemental appropriations, the increase of orders, and the presumed increased rate of production after 25 June 1950 - the Korean War.

Conclusions:

The 3800 aircraft estimated as produced (as against 3164 scheduled for delivery) for the A.F. between 1 July 1949 and 20 June 1951 may be too high; but it is lower than the highly publicized 3,000 military aircraft for Calendar 1950. The addition of the 2,004 Combat Planes which Symington described as "Not Obsolete" by 1 July 1951,

Table II (cont.)

gives a total of 5,840 first line, modern aircraft available 1 July 1951 (cf. Symington's prediction of 5,700 "modern" aircraft of which 5,200 were of quality for a modern 48 Wing A.F. The 3,800 aircraft includes Non-Combat types (Troop Carriers, Trainers, etc.) so the round figure of 4,600 first-line Combat aircraft reached by totalling the numbers of aircraft by types (see above) is compatible with the total of 5,800 aircraft. In normal figures, a total of 5,000 to 6,000 first-line aircraft of all types seems the highest estimate obtainable by conservative calculation.

Even with increased acceleration of production, it is doubtful that the actual number of first-line aircraft exceeds appreciably Symington's estimate of 5,700, or that of 5,200 fit for a 48 Wing A.F. The use of B29s in large numbers, B26s and F-51s in large numbers in Korea indicates that only by using such aircraft (defined in February 1950 as becoming obsolete by February or July 1951) has the AF been able to equip the alleged "87 Wing" air force of which 78 Combat Wings have been identified (the 4 MATS Wings are not included in the 78).

Table III

Calculation for Fiscal Year 1950/51

SECRET

Estimate of Military Aircraft (A.F., Navy, Army, MDAP) Production for Fiscal Year 1951 (1 July 1950 – 30 June 1951) Based on Wilson Formula: June 1951 = 2/3 Increase in the Rate of Production over June 1950.

June 1950 Production Rate of 215 per month provided by Aircraft Industry Association of America; Rate of 200 estimated from Appropriations for Procurement of 2048 aircraft for Fiscal Year 1950.

June 1950 = 200 a/c plus 2/3 (133) = 333 a/c for June 1951. Monthly average increase = 11.

June 1950 = 215 a/c plus 2/3 (143) = 358 a/c for June 1951. Monthly average increase = 12.

1950	Rate of 200 in June 1950 + 11	Rate of 215 in June 1950 + 12
July	211	227
August	222	239
September	233	251
October	244	263
November	255	275
December	266	287
Six Months	1431	1542
1951		
January	277	299
February	288	311
March	299	323
April	310	335
May	321	347
June	333	358
Six Months	1828	1973
Total Fiscal Year 1951	3259	[illegible]

SECRET

 374

Table III (cont.)

Calculation for Fiscal Year 1951/52

June 1950 = 200 a/c per month x 2/3 = 333 a/c per month, June 1951.

June 1951 = 333 a/c per month x 3 = 999 a/c per month, June 1952.

SECRET

Average Increase = 55.55 a/c per month.

Fiscal Year 1951/52 estimate by application of "Rule of 3" which assumes full, all-out production. Therefore, this estimate may be too high and a maximum.

1951		
July	388	
August	444	
September	499	
October	555	
November	610	
December	666	
Six Months, 1951		3162
1952		
January	721	
February	777	
March	832	
April	888	
May	943	
June	999	
Six Months, 1952		5160
Fiscal Year 1952		8322 (N1)

Note 1. Office of Defense Mobilization stated on 26 July 1951 that aircraft production was "well over 20% behind schedule;" but Wilson stated

 375

Table III (cont.)

Note 1 (cont.)

SECRET

16 August 1951 that aircraft production January-June 1951 "rose 50% and is expected to rise another 70-80% by 31 December 1951. The remarks cancel each other, and the estimate of 8,322 aircraft for Fiscal Year 1951/52 is used hereinafter.

Summary of Total Military Aircraft Production Estimates

Fiscal Years	Total	Air Force
1949/50	2600 a/c	1800 a/c
1950/51	3200 a/c	2000 a/c
1 July-31 Dec.	1400 a/c	900 a/c
1 Jan.-30 June	1800 a/c	1100 a/c
1951/52	8322 a/c	5200 a/c
1 July-31 Dec.	3162 a/c	2000 a/c
1 Jan.-30 June	5160 a/c	3200 a/c

Possible total A.F. aircraft produced during the three years 1 July 1949 to 30 June 1952: 8,200 a/c. This figure of 8,200 a/c is less than 3,000 a/c per year, hardly enough a/c to equip an 87 Wing Air Force since Gen. Rawlings stated on 8 February 1950 that an annual production rate of 2,000 a/c was needed to maintain a 48 group air force. The lag behind the requirements for the much-talked of 95,130, and 150 group air forces is too great, and too obvious, for comment. Senator Lodge's 150 Wing Air Force seems, as of 1 September 1951, a politician's dream.

SECRET

Table IV

Production of Aircraft by Types

For years 1948 and 1949 from estimates by Aircraft Industries Association. For 1950 and 1951 estimates from various sources.

Bombers

SECRET

Aircraft	1948	1949	1950	1951 [to 1 Sept.]	Total	
B-29			116 converted KB29 reconditioned 1951/52			
B-36		75	55	23	93	153
RB-36					60	
B-45	43		53	47	143	
B-47		15	25	60	100	
B-50	82	132	8		222	
XB-51				2	2	
B-57A	[Large orders in production]					
Total					598	

Fighters

Aircraft	1948	1949	1950	1951 [to 1 Sept.]	Total
F-51					
F-80			[Out]	[Total built]	1727
F-82	154	409	22		585
F-84		[700] (N1)	2[illegible]	100	1000
F-86	188	333	170	109	800
F-88					
F-89		48	50	32	130
F-94		110	50 (?)	50 (?)	210
F-95			120	80	200
Total:	1948-1951 [1 Sept.] [Excluding 1727 F-80s]				2925

Note 1. 700 F-84s are said to have been built by January 1950.

Table IV (cont.)

Transports

C-45 [933 to be re-manufactured (Aug. 1951)]

C-46 [Over 2,000 built to 1946]

SECRET

C-47 [10,123 built (157 in ANG, Aug. 1951)]

Aircraft	1948	1949	1950	1951 [to 1 Sept.]	Total
C-54	313 [before '48]				
C-74	14 [or earlier]				
C-82	20 [220 by Sept. 48]				20
C-97	27	23	22	24 (?)	96
XC-99					1
C-118B				15	15
C-119	37 [1948 and earlier]	99	50	50 (?)	236
XC-120					1
C-121A	10				10
C-121B				10	10
YC-122	2			[YC-122C] 12	14
XC-123				1	1 (N1)
C-124	1	29	28	42	100
YC-124B					
C-125	23 (?)				23
Total Produced 1948-1951 [to 1 Sept.]					527

Note 1. Used at Southern Pines Exercises 25 August 1951, so perhaps more than 1 aircraft in-being.

Table IV (cont.)

Trainers

SECRET

Aircraft	1948	1949	1950	1951 [to 1 Sept.]	Total
T-28 & T-28B		266	125	175	566
T-29		36	20	20	76
T-31	[In Production?]				
T-33	28	128	82	82	320
YT-34				3	3
YT-35				3	3
T-36	[300 on Order]				
T-B500	[First Del. Apr. 1951]				
	Total Produced 1948-1951 [to 1 Sept.]				968

Helicopters

Aircraft	1948	1949	1950	1951 [to 1 Sept.]	Total
H-5	16	100			116
H-12				11	11
H-18					
H-19		5			5
H-21			62	68	130
	Total Produced 1948-1951 [to 1 Sept.]				262
SA-16	20	32	32	40 (?)	124

NOTE

Analysis of Production by

The Douglas Aircraft Company

Moody's and Standard and Poor's have made available the number of aircraft units actually built by Douglas Aircraft Co. for each Calendar Year through 1950. Along with sales in dollars, airframe weight and the ratio of commercial to military sales, these data make it possible to reach an estimate of the number of A.F. C-124s and Navy ADs and F3Ds produced in 1949 and 1950.

		Summary		
Aircraft	1949	1950	1951 [to 1 Sept.]	Total
C-124	29	28	42	99
AD	215	172	60	960
F3D	14	28	42	84
Commercial	31	18		
	289	246		

The data and calculations upon which these estimates are based are from Moody's and Standard and Poor's (1951).

Douglas Aircraft Co., 1949

Sales: 289 a/c		$117.4 Millions	
Commercial	13%	15.3 "	31 a/c
Military	87%	102.1 "	258 a/c
Air Force	46% (1)	47. "	29 C-124s
Navy	53%	54.1 "	215 ADs, 14 F3Ds

Air Force: Cost of 1 a/c - C-124 = $1.6 [Estimate from other sources]

$47. ÷ $1.6 = $29.37 = 29 C-124s.

Navy and Commercial: 289 a/c - 29 = 260 a/c.

Commercial:(2) $15.3 at $500,000 = 31 a/c(3)

Navy : 54.1 = 229 a/c

$40. at $190,000 [guess]	=	215 ADs(4)
$14. at $1. Mill.["]	=	14 F3Ds(5)
$54		229 a/c(3)

Notes: 1) Percent given for 1950 by Standard and Poor's Corporation Records, 25 June 1951, p. 4787, and arbitrarilly applied to 1949 sales.

2) Aircraft Year Book 1949: 163 DC6s delivered or on order; idem., 1950: 211 DC6s delivered or on order; Standard and Poor's (March 1951) 260 do.

3) The mathematical probability for the number of commercial a/c lies between 15 and 31; the probability for Navy a/c (both ADs and F3Ds) between 299 and 245.

4) 900-plus ADs had been built between May 1946 and 31 December 1951. This total may be apportioned approximately as follows:

1946:	100	1948:	213	1950:	172
1947:	200	1949:	215	Total:	900

5) A Procurement Appropriation of $61.7 Millions on the Fiscal Year 1949/50 budget was allocated for F3Ds. At $1. Million per a/c, 62 F3Ds were on order, from which the 28 built in 1950 may be deducted leaving a balance of 32 to be built in 1951. But the Fiscal Year 1950/51 budget probably provided for many more orders since Douglas backlog increased from $275.5 Millions (30 November 1949) to $656.4 Millions (30 November 1950) and to 789. Millions (1 April 1951). Also, Procurement Funds for ADs in 1950 were only

$12. Millions and though production of ADs is said to be "continuing," greater effort probably has been applied to produce F3Ds which were "in full production" in 1949 and 1950.

Since the F3D was "in full production" before December 1950, the "Rate of 3" may well apply:

Rate for Dec. 1950 = 3 per month x 3 = 9 per month Dec. 1951.

Average monthly increase = .5 ∴ Jan.-Aug. 1951 = 42 F3Ds.

		1950		
Sales:	246 a/c	$130. Millions		
	Spare Parts	10.	"	
	246 a/c	120.	"	
	10% Commercial (1)	12	"	18 a/c [DC6s?]
	90% Military (1)	108.	"	228 a/c
	Air Force 46% (2)	50.	"	28 C-124s
	Navy 54% (2)	58.	"	200 ADs, F3Ds

Air Force: Cost of 1 a/c, c-124 = $1.8 [estimate from other sources]

$50 ÷ 1.8 = $27.7 = 28 a/c, C-124s.

Navy and Commercial: 246 a/c - 28 = 218 a/c

Commercial: $12. at $666,000 = 18 a/c

Navy : $58. = 200 a/c

$30. ÷ $175,000 (1) = 172 ADs

$28. ÷ $1. Million (1) = 28 F3Ds (3)

$58. Millions 200 Navy a/c

Notes: 1) Guess (1950 Backlog included 15% Commercial Commitments, Standard and Poor's Corp. Descrition, p. 4787).

382

2) Standard and Poor's Corporation Records, 25 June 1951.

3) Moody's Manual of Investments, pp. 2485-88, states that Douglas a/c in production in 1950 were C-124, AD, F3-D, DC-6, DC-6B; also experimental a/c and Guided Missiles.

1951 (January-August)

[No actual production data is yet available]

Estimate based on Orders of C-124s.

Orders: to Dec. 1949: 30

Current Feb., 1950: 66 [Aviation Week, Feb. 1950]

July 1950: 80

Executed: 1949: 29

1950: 28

57

Bal. on order, 1 Jan. 1951: 23 C-124s.

Backlog 30 November 1950 = $656,362,000

15% Commercial (Moody's): 98.46 Millions

85% Military 557.9 "

46% Air Force (C-124) 246.68 "

$246.68 ÷ $1.8 (1 C-124) = 148 C-124s on Order 1 December 1950.

Conclusion: Since Rate of C-124 production was steady and averaged 2 1/2 a/c per month during 1949 and 1950, the "Rule of 3" may be applied to a rate of 3 per month during December 1950:

December 1950: 3 per month x 3 = 9 per month December 1951.

Average monthly increase for 1951 = .5.

January-August 1951 production = 42 C-124s.

Total C-124s : 1949: 29

1950: 28

1951: 42 [to 1 Sept.]

99 C-124s "in-being"

 384

Moody's "Industrials" 1951, p. 2485-86

"The following table exhibits the production of the Company [Douglas] . . . in number of planes and dollar value since 1922:" [Not included prior to 1936]

SECRET

Year (31 December)	Aircraft	Sales etc. $ Millions
1950	246	129.893
1949	289	117.422
1948	270	118.582
1947	361	128.459
1946	127	106.721
1945	5,353	744.683
1944	11,598	1,061.407
1943	9,017	987.687
1942	3,416	501.782
1941	1,233	180.940
1940	579	60.971
1939	314	27.867
1938	410	28.347
1937	303	20.950
1936	228	10.087

SECRET

C

AIRCRAFT PERFORMANCE DATA

PERFORMANCE

The available material gives the impression that the USAF has decided to concentrate on a comparatively small number of aircraft types, which will be produced in quantity. These types are: SECRET

Bombers

B36 heavy

B47 medium

B57A light

Fighters

F84E, F84F

F86

F89

F94

Transport

C97

C119

C124

Trainers

T28

T29

T33

In addition, the AF has at its disposal numbers of planes not scheduled for further production. These include:

Bombers

B26, B29, B45, B50

Fighters

F51, F80, F82

 387

All of the combat types have jet power plants, except the B36, which has six piston engines and four jet auxiliary engines.

SECRET

The B36 is scheduled for continued production, but there are indications that the AF is no longer willing to put all its strategic bombing eggs in this one basket. In spite of AF claims, it does not seem likely that the new 10-engined B36D has sufficient speed to protect it against the high-speed, fast-climb fighters which the Russians claim to be developing. The four additional jet engines consume too much fuel to be used continuously over enemy territory on a deep penetration mission; their function is rather to provide extra power for a high-speed run over the target. This means that for a great deal of the time it is over enemy territory the plane will be flying at something like the speed of the unmodified B36, i.e. somewhere above 300 mph. And on the long-range missions for which it is designed, there is no possibility of providing it with fighter-escort, even if aerial tankers are used.

The RB36, flying without the heavy bomb load, will fly much faster and may be able to carry out long-range reconnaissance missions without prohibitive casualties. There are indications that the reconnaissance version of the B36 is considered just as important as the bomber by the AF.

If, as seems likely from the foregoing, the main effort of SAC will have to be made with a faster bomber, that is an all-jet bomber which sacrifices range for speed, the B47 emerges as the most important strategic bombing aircraft. This is perhaps confirmed by indications that production of the B47 is being speeded up, and the large order placed for B47 link trainers proves that it is to be a standard AF plane for some time to come, and one which is to be available in quantity.

This plane can carry the atomic bomb, and completed trials with it in March 1951. It has a speed which should be high enough to make it immune

to defense fighters (maximum above 600 mph.). Unlike the B36 it dispenses with the weight of defensive armament except for a remote-control tail turret. Its combat radius of 220-2400 miles (2700-2900 with in-flight refuelling) means that it can carry out strategic missions from bases in England or the Mediterranean. It has dropped bombs accurately at speeds of over 500 mph.

The third bomber on which the AF seems to be concentrating, the B57A (the British Canberra) is a light bomber, and will be the main tactical bomber of the AF, superseding the B45. It is probably intended to answer the Army's demand for a modern troop-support bomber as well as to fit AF requirements for a night intruder. Its speed, range and capacity (as far as they can be inferred from material published about the Canberra) indicate superior performance.

The B50D, no longer in production, but assigned to SAC, is capable of carrying atomic bombs and has strategic range. But even its heavy armament will not protect it against jet fighters, and it will need escort. Its range is consequently reduced to that of the escort fighters.

The B45 seems to be assigned solely to photographic reconnaissance missions (RB45C).

The B26 and B29 though carrying the total burden of bombing operations in Korea, can hardly be counted on for a major war, except for short-range night missions.

The F84E and F84F are versatile fighters which can be used for ground support, interception and escort work. According to Secretary Lovett, they have a theoretical performance equal to the MIG15. Range of approximately 1000 miles with wing tanks for escort missions, with a high rate of climb for aerial combat. The plane has demonstrated great versatility in the Korean operations.

The F86 seems to be the AF's best escort and interceptor; it has

high speed, long range (perhaps 1250 miles with wing tanks) and a very high rate of climb even at altitudes over 30,000 feet.

The F94 is the AF's night and all-weather fighter currently assigned to areas which contain atomic plants. Radar-equipped, it has relatively short range, but extremely high rate of climb (7350 fpm. with afterburner). At present the standard aircraft of the Air Defense Command, it may eventually be superseded in the role by the F89, which is armed with 20 mm. cannon, a weapon which has too slow a rate of fire to be used successfully against fighters, but is ideal for attack on bombers. The F89 is a twin-engine, two-seat fighter, and like the F94, carries a full load of radar and a radar operator. It has a lower rate of climb than the F94, but greater range.

The F80, though outclassed by the MIG15, can still be used for ground support missions and for reconnaissance. It does not seem likely that the F51 and F82 would prove of value in the event of full deployment of enemy air power.

The transports include cargo- and troop-carrying planes of great range and capacity. The C124 with its nose-opening, can accomodate 94% of all AF and Army equipment. Like the other transport planes it can serve as either cargo or troop-carrier.

EXPERIMENTAL AIRCRAFT

SECRET

These fall into two categories: 1) purely experimental craft which are not intended for production, and which serve as "flying laboratories" for the investigation of transonic speed conditions etc., and 2) prototypes which are tested (sometimes over long periods) and may at any moment be ordered into production, like the McDonnel XF88 (Voodoo), two prototypes of which were delivered in 1949, and which is only now to be produced in quantity. Prototypes which, after testing, are not selected for production, then become experimental aircraft proper and are turned over to an AF research station.

Part I. Experimental Aircraft (AF)

The X series (S1, 2, 3, 4, 5) have been used and are still being used for research in transonic speed conditions. (For performance of X1, 2, 3 and 4 see below). The latest in this series, the Bell X-5 has variable swept-back wings, an Allison J-35-A-17 which gives it greater endurance than the previous rocket-powered models, and will take off from the ground. Flight tests are to begin soon at Edwards AFB. To investigate aerodynamic effects of changing degrees of wing sweep-back during flight.

XF92A, Convair. Now turned over to Muroc to join supersonic research program. Delta-wing fighter with 60° sweep. This configuration is especially suitable for supersonic flight. The plane has an astonishing rate of climb (reported at 12,000 feet per minute). There are reports that Convair is designing a new delta-wing interceptor, incorporating features of the XF92A.

YF93A, originally YF86C. F86 modified to carry nose radar. Long-range escort-fighter. Both prototypes turned over to NACA Flight Test Laboratory at Edwards AFB.

Part II. Prototypes

Bombers

XB-51, Martin. Two prototypes built. A 3-engine jet bomber with very high thrust and speed, designed principally for low- and medium-level assault on military targets. It is considered by Martin to be "the smallest and lightest airplane available which is capable of meeting the requirements of the U.S. ground forces and Air Force for adequate ground support." It has variable-incidence wings, provision for RATO and parachute deceleration. This plane is the ground forces' candidate for a tactical support bomber, but it is not likely to go into production soon; for one thing, the Martin plant is producing the B-57A, which seems to be designed for the same role as the XB-51.

XB-49. The Northrop "Flying Wing." A revolutionary aircraft, but apparently not yet practicable; at any rate, both prototypes have been destroyed in accidents. The design may, however, have importance for future types. The manufacturers claim superiority over conventional types in drag reduction, range, speed and weight-lifting ability. A YB-49 prototype flew 3458 miles at an average speed of 382 mph. Its weight-lifting capacity is formidable; empty weight is 88,100 lbs., gross weight is 213,000 lbs. A YRB49A is reported in production.

Fighters

XF-85, McDonnell. An exceptionally light (5201 lbs.) parasite fighter, designed to be carried by a B-36, launched in flight and re-loaded by a hooking device. Launching and re-loading have been successfully accomplished. The plane has a Westinghouse J-34 engine (s.t. 3000 lbs.), a maximum speed of over 600 mph, and is armed with 4 cal. .50 guns.

XF-91. Republic. A specialized single-seat interceptor designed to attack fast high-flying bombers operating in daylight; the armament consists of 20 mm. cannon, which are (at their present rate of fire) comparatively useless against fighters, but well adapted to hitting and damaging bombers. The wings are inverse-tapered, and have variable incidence. It has a very high rate of climb and its best performance is at over 35,000'. The addition of 2 500-gal. external tanks give it great endurance. The fact that there are no indications of plans for production indicates a conviction on the part of USAF that it will not have to deal with daylight bombing attacks in force.

SECRET

XF-90. Lockheed. One of the heaviest fighters ever built (26,000 lbs.). Its two West. J-34 engines, with afterburner give it power which has reportedly driven the plane at supersonic speed. It was designed as a long-range penetration fighter and can carry bombs and rockets as well as its 4 20 mm. cannon. This armament-carrying capacity means that it could also function as a ground support plane.

List of Plane Types Described

SECRET

Bombers

B26, B26C, XB26F

B29A, B29B, KB29

B36A, B36B, B36D, B36E, B36F, [B36G = YB60], RB36D, RB36E

B45A, B45C, RB45C

B47A, B47B, B47C

B50A, B50D, RB50B

XB51

B52

[B56 = B47C]

B57A

[YB60 = B36G]

Douglas Model 1211J

Fighters

F51D, F51H

F80A, F80B, F80C

F82E, F82F

F84B, F84C, F84D, F84E, F84F, RF84F, F84G

F86A, F86C, F86D, F86E, F86H

F88

394

SECRET

Fighters (cont.)

F89A, F89B, F89C

XF90

XF91

XF92A

YF93A

F94A, F94B, F94C, F94D

[F95A = F86D]

YF96

[F97 = F94C]

Transports

C45

C46

C47

C54, C54G, C54M

C74

C82A

C97A, C97B, C97C, KC97A, KC97E

XC99

C119B, C119C, C119H

C118

XC120

C121

YC122, YC122C

C123

C124A, YC124B

XC125, C125A, C125B

YC129

395

Helicopters

H5

H12

SECRET

H18

H19

H21

Trainers

T6, T6G

TB25

T28

T29

YT31

T33A

YT34

YT35

T36

TB50D

T51

Liaison

L5

LC126

Experimental Aircraft

X1

X1A

X2

396

Experimental Aircraft (cont.)

X3

X4

X5

SECRET

397

B O M B E R S

B26

SECRET

Designations	B26 [previously A26] B26C
Manufacturer	Douglas
Name	Invader
	Light bomber, technically obsolete, but one of the work horses of the Korean campaign. Missions over Korea include day and night bombing, both penetration and tactical support. Equipped for radar bombing at night and in bad weather. Does not seem to require fighter escort in Korean conditions. Very few reported shot down in FEAF communiqués. It is not likely that it can continue to perform against modern interceptor aircraft in quantity, and the B57A is presumably intended to replace the B26 in future operations
Power	2 P & W R-2800-71. 1600 hp. each. 2000 each for take-off.
Speed	Max. 359 mph. at 16,700'. cruising 266 mph. at 5,000'.
Range	At cruising speed with design load 700 miles.
Altitude	Service ceiling 28,500'.
Bomb Load	[Figures for A-26-C] 4 1000 lb. bombs in bays, or 4 500 lb. bombs under wings with reduced load in bomb-bays, or 28 100 lb. bombs and 4 napalm tanks.
Armament	[In Korea] 16 cal. .50 guns. 14 forward and 2 in turret. 6000 rounds total ammunition plus 4 cannon.
	Cost per flying hr. $72.75.

398

SECRET

B26C

Power	2 P&W R-2800-79.
	2370 hp. each.
Speed	372 mph.
Range	With combat load 1740 miles.
Altitude	
Bomb Load	5000 lbs.

XB26F

Jet-powered model. Photograph, Flying, February, 1950, p. 31.

B29

Designations	B29A, B29B, KB29.
Manufacturer	Boeing.
Name	Superfortress.

Obsolescent, but used as the medium bomber in Korean operations. Operates safely with jet-fighter escort for daylight operations. Without escort it could probably not fulfill its daylight missions even in Korea; according to Capt. Jabara, "the B29 is an easy target" for the MIG15. In a major war, the B29 would be superseded by B45, B47, and B50.

Converted to KB29, the airplane will remain in service as an aerial tanker, refuelling both bomber and fighter planes in flight.

B29A

Power	4 Wright R-3350-51. 2500 hp.
	4 Wright R-3350-57. 2200 hp.
Speed	Max. 351 mph. at 25,000'.

SECRET

B29A (cont.)

Range	2850 miles at cruising speed. At 10,000'.
Altitude	Service ceiling 35,000' + .
	Climb to 25,000' in 44 min.
Bomb Load	"About 20,000 lbs. depending on distance."
	Dropping 1/4 ton proximity-fuse bombs in Korea.
Armament	4 GE RC electrically operated turrets, two above and two below fuselage. Forward upper 4 cal. .50 guns, remainder 2 cal. .50 guns each. Tail turret 2 cal. .50 guns.
	Cost per flying hour $233.33.

B29B

Power	4 Wright R-3350-51.
Speed	Max. 361 mph.
	350 at 24,500'.
Range	4600 + miles with 10,000 lbs.
Altitude	Service ceiling 35,000'+ .
Bomb Load	23,000 lbs.
Armament	Fuselage turrets of B29A removed. 3 gun tail-turret added.
	2 .50 hand-held waist guns.
	Crew 10-14.

KB29

Tanker plane for in-flight refuelling for B50.

B36

Designations	B36A, B36B, B36D, B36E, B36F, RB36D, RB36E.
Manufacturer	Consolidated Vultee.
Name	None.

B36 (cont.)

Intercontinental bomber. No data available to evaluate combat performance. AF order for Boeing B52 perhaps indicates a certain lack of confidence, and the emphasis on reconnaissance versions of this plane perhaps points the same way.

B36A SECRET

First production model. 22 built.

Modified into RB36E.

B36B (since converted to RB36)

First flew July 8, 1948.

Power 6 P&W R-4360-41 with water-injection.

2650 hp. at 2550 rpm. at 35,000' 3500 hp. for take-off.

Speed Max. over 350 mph. Stalling 95.

Range Max. designed range 10,000 miles.

Total fuel capacity 21,116 U.S. gals.

Altitude Service ceiling 40,000' +.

Bomb Load 10,000 lb. for 10,000 miles.

Max. 84,000 lbs.

Armament 6 retractable remote control turrets, each mounting twin .20 mm. cannon, plua 2 .20 mm. cannon on flexible mounting in nose and 2 more in radar-controlled tail-turret.

B36D

Additional power primarily to increase speed over target area.

Power 6 R-4360-41 (3500 hp) + 4 GE-J47 turbojets [J50]. GE47 has 5200 s.t. Total 21,000 hp. + 20,800 lbs. s.t.

SECRET

401

B36D (cont.)

Speed	Over-target speed (with turbojets) 435 mph at 50,000'.
Range	11,000 miles with 10,000 lbs.
Altitude	Service ceiling estimated at 45,000' to 50,000'.
	Rate of climb 1200 fpm.
Bomb Load	Up to 75,000 lbs. at reduced ranges.
	2 42,000 lb. bombs
Armament	16 20mm. cannon.
Remarks	Gross wt. heavier than B36B.

SECRET

B36F

Power	6 P&W R-4360-53. 3800 hp. plus 4 GE J47 Turbojets.
Speed	436 mph. at 40,000'.
Range	Same as B36D.
Altitude	
Bomb Load	
Armament	Guns fire "20 mm. electric-primed cartridge."
Remarks	First production B36F's delivered.

RB36D

Power	Same as B36D.

RB36E

	First delivery to AF reported June 12, 1950.
	14 high-altitude cameras, one with 48" focal length lens.
Power	P 6 W 4360.
Armament	16 20 mm. cannon, in 8 RC turrets.

402

B36 ?

B36 turboprop scheduled for flight tests in 1952.

Allison double turbine T-40 - 550 hp. plus P & W PT2 turboprop engines - 5000 hp.

YB36G - [YB60]

SECRET

All-jet B-36 to fly fall 1951. With swept-back wings. AF has ordered 2 experimental models.

P&W 8 jet J57's.

Remarks — Cutaway of B36 (showing turret position), in Flying, April 1951, p. 15.

Loss of power from 1, 2, 3, or 4 engines not critical.

Cost per flying hour, $1024.17.

B45

Designations — B45A, B45C, RB45C.

Manufacturer — North American.

Name — Tornado.

Jet-engined medium bomber. The first production model B45A is out of production; some of them have been modified as target-tugs. As in the case of the B36, there are indications that the AF has more confidence in the reconnaissance version of the plane than the bomber.

B45A

Power — 4 GE J-47-GE-3 turbojet engines. Total s.t. 20,800 lbs.

Max. internal fuel capacity 4500 U.S. gals.

Speed — Max. over 550 mph.

Range — Tactical radius over 800 m.

SECRET

B45A (cont.)

Altitude	Service ceiling 40,000'.
Bomb Load	Over 10 tons.
Armament	2 .50 guns in tail position.
	Crew of 4.
	Cost per flying hour $386.77.

SECRET

B45C

Power	4 GE-J47 turbojets. 6000 lbs. st.
	Water-injection being added.
Speed	- ground speed on non-stop flight was 569 mph.
Range	With wing-tanks, over 1200 m.
	Can be refuelled in-flight by KB29.
Altitude	No new data.
Bomb Load	10 tons of bombs, Tiny Tim rockets, HVAR rockets and napalm bombs.
Armament	2 cal. .50 guns in tail.
(Sept. 1950)	AF permitted North American announcement that the plane dropped bombs at speeds over 500 mph.

RB45C

	First delivered to SAC June 1950.
Power	4 GE J-47.
Speed	
Range	Combat radius over 1200 miles with wing-tip tanks carrying 1200 gals. each.
Altitude	Service ceiling over 40,000'.
Remarks	5 camera stations.
	4 RB45Cs accompanied by 4 RB29s flew to England.

404

RB45C (cont.)

205 miles in 13 minutes, 15 seconds. Average 886 mph.

For day and night missions at high and low altitudes, charting, mapping and photographing.

Max. take-off weight 110,000 lbs.

SECRET

B 47

Designations B47A, B47B, B47C [B56].

Manufacturer Boeing.

Name Stratojet.

In its 4-engine version, the B47C, this airplane seems to be slated for full production and use. The AF has ordered $2,000,000 of link-trainers B47 model for 1951. Equipped for in-flight refuelling, it has a range which makes it capable of strategic bombing missions from North European and Mediterranean bases, and a speed which makes fighter-escort unnecessary. XB47 prototype flew non-stop 2289 miles in 3 hours, 46 minutes. Average speed 607 mph.

B47A

Power 6 GE-J47-23 turbojets. Total s.t. 30,000 lbs.

Auxiliary take-off power-rocked motors 20,000 lbs.

Also 6 GE-J47-E 23. 5800 s.t. each.

Speed Over 600 plus.

B47A flew 1425 miles at average speed 542 mph.

Range 4000.

Altitude Service ceiling 35,000' - 40,000'.

Rate of climb 4,000 fpm.

SECRET

B47A (cont.)

Bomb Load	20,000-plus lbs.
Armament	Remote-controlled tail armament only.
Remarks	First production B47A turned over to AF inspection, March 1, 1950.

SECRET

B47C

[Redesignated B56 but this has been dropped.]

Power	4 Allison J-35-A-23. An "all-weather" engine. Estimates of static thrust of this engine vary but it is probably over 9000 lb. RATO gives extra 20,000 lb. s.t. for take-off.
Speed	650 mph. max. 630 level, sonic in shallow dive.
Range	With wing-tanks 6000 miles. Combat radius 2200 - 2400, 27-2900 with in-flight refuelling.
Altitude	No new data.
Bomb Load	" " "
Armament	" " "

B50

Designations	B50A, B50D, RB50B.
Manufacturer	Boeing.
Name	Superfortress.

Modified B29. Greatly increased speed and range (provision for in-flight refuelling) make the B50 capable of strategic bombing missions, but it would almost certainly need heavy fighter escort.

B50A

Power	4 P & W R-4360-35. 2650 hp. - 3500 hp. for take-off with water [illegible]

SECRET

406

B50A (cont.)

Speed	Max. over 400 mph. Cruising over 300 mph.
Range	Operating range over 6,000 miles with 10,000 lbs.
Altitude	Ceiling over 35,000'.
Bomb Load	Total max. 28,000 lbs.
Armament	4 GE remotely-controlled and electrically-operated turrets. 2 above and 2 below fuselage. Forward upper 4 .50", remainder 2 .50" guns. 3 .50" guns in tail. Five sighting stations, one in nose, three in middle pressurized compartment, one in tail. Crew 11. Cost per flying hour $421.00.

SECRET

RB50B

Photographic and weather reconnaissance laboratory.

Power	As above.
Speed	Increase over B50D.
Range	Two 700 gal. droppable wing tanks.
	Equipped for in-flight refuelling.
Altitude	Up to 40,000'.
Equipment	4 camera stations, radar, weather devices.

B50D

General	Development of B50B with increased bomb-load or fuel capacity.
Power	4 P & W R-4360-35.
	[Performance as above.]
	Fuel capacity 8,000 gal.
Speed	Max. 400-plus.
	Cruising 300 mph.

Approved For Release 2004/07/28 : CIA-RDP79R00971A000300020002-0

B50D (cont.)

Range	Normal range 6,000 miles with 10,000 lbs.
	Can carry 2 700-gal. external tanks.
	Equipped for in-flight refuelling.
Altitude	40,000'-plus. Rate of climb 1800 fpm.
Bomb Load	Extra 4,000 lb. bomb under each wing.
Armament	Modified four-gun top forward turret.
	Crew 11.

SECRET

XB51

Designation	XB51 . 2 built.
Manufacturer	Martin.
	The future of this airplane is still in doubt; Martin has built two models, but it is not yet in production. It is the Army's candidate for support bomber, and its performance data indicate that it is well suited for that role. But the B57A will probably be used instead.
Power	3 GE J47-GE-9
	5200 lb. s.t. at sea-level.
	RATO
Speed	Various estimates: 585 mph at 25,000'
	max. 635 mph
	around 630
	Rumored 100 mph faster than Canberra.
Range	Combat radius under 1,000 miles.
	Fuel capacity 4,000 gals.

XB51 (cont.)

SECRET

Altitude	Service Ceiling 45,000'.
	Rate of climb 6,000 fpm.
Bomb Load	Around 20,000 lbs.
	Crew of 2.
Armament	
Notes	Variable-incidence wing.
	Parachute deceleration.

B52

Designation	
Manufacturer	Boeing
Name	
	Now scheduled to go into production, apparently to replace the B-36 in the future as the SAC inter-continental bomber. Greater speed and altitude than the B36.
Power	8 P & W J-57 jet engines.
	Estimates of static thrust vary between 9,000 and 10,000 lb.
	These engines are difficult to obtain.
Speed	Greater than B36.
Range	Expected to have combat radius of 3,000-plus miles.
	Equipped for in-flight refuelling.
Altitude	Will drop bombs from above 50,000'.
Bomb Load	Designed for 10,000 lbs, for 10,000 miles
	Crew 9 plus relief crew.
Notes	First deliveries before the end of 1951.

B52 (cont.)

Cost $21,000, each (includes $12,500,000 to cover cost of tooling).

Bombsight device more than $250,000. SECRET

Unit price will drop to $3,800,000 for 100 planes.

Runway lengthened to 10,000' for testing XB52.

B57A

Martin version of English Electric Canberra.

All indications are that the B57As primary mission will be ground-support.

Power	Canberra:	2 RR Avion jets. s.t. 6500-7500 lbs.
	B57A :	2 J-65 Sapphire. 7500 lbs. s.t.
		Fuel tanks to be modified to take JP-3
Speed	Canberra:	580 mph.
Range	Canberra:	flew 2100 miles in 4 hours, 40 minutes.
	"	flew 1155 " " 2 hours, 55 minutes.
		flew 10,249 miles. Average speed 486 mph.
Altitude	Specification for Canberra was 50,000'.	
Bomb Load	Canberra:	claimed capacity of 10,000 lb.
	B57A :	bomb-bay redesigned to carry larger number of smaller bombs.
Armament	Gunsight and fixed forward-firing guns.	
	Heavy load of rockets, armament and radar.	
	Crew 3 - pressurized cabin.	
Notes	B57A will be a night-intruder, attacking ground targets.	
	For cut-away of British Canberra, see AW, February 13, 1950, p. 22.	

410

Model 1211-J

Manufacturer Douglas

SECRET

This model has apparently never got farther than the drawing board. But its publication in Aviation Week, January 2, 1951, seems to have been a real leak.

4 engined turboprop inter-continental bomber.

Specifications call for gross take-of weight of 322,000 lb.

Normal absolute range of 11,000 nautical miles.

Combat altitude above 55,000'.

Speed in excess of 450 knots.

Rate of climb 500 fpm.

20 mm. cannon plus air-to-air rockets.

FIGHTERS

SECRET

F51

Designations	Previously P51. F51D, F51H.
Manufacturer	North American.
Name	Mustang.
	Used in Korea for attack missions against troops, positions, bridges, airfields, etc. Vulnerable to ground fire and unable to fight enemy jet aircraft. In a major war its role would be confined to close support and even that is problematical.

F51D & H

Power	Packard-built Rolls Royce Merlin V-1650-9.
	" " " " " V-1650-11.
	2000 hp.
	2800 with water injection.
Speed	Max. 488 mph. at 25,000'.
	Max. fully loaded 450 mph.
Range	[P51] 2208 miles at 307 mph at 25,000'.
	[F51D] Combat radius 950 miles.
	New type external fuel tanks.
Altitude	[F51H] service ceiling 42-43,000'.
	[P51] Max. rate of climb 6400 fpm. at 5,000'.
	Normal rate of climb 2300 fpm. at 17,500'.
	Climb to 20,000' in 8 minutes.

412

F51D & H (cont.)

Armament 6 cal. .50 guns on wings. SECRET

400 rounds each for inner guns, 270 each for others.

10 5" rockets, 2 1000 lb. bombs or 2 napalm bombs.

New-type rocket launchers.

Cost per flying hour, $62.92.

F80

Designations F80A, F80B, F80C.

Manufacturer Lockheed.

Name Shooting Star.

No longer in production. A very rugged aircraft, though apparently quite vulnerable to ground fire on strafing missions. Has carried 500 lb. bombs in Korea. As a fighter it is outclassed completely by the MIG15 according to Capt. Jabara.

F80A

First production model. All F80As modernized to incorporate principal features of F80B, by March 1948.

F80B

Power 1 Allison J33-A-23.

Normal s.t. 3900 lb., dry s.t. 4600, with water injection, 5400 lb.

JATO.

Speed 605 mph.

Range 1100 miles.

2 fuel tanks, 165 gal. each.

SECRET

F80B (cont.)

Altitude Ceiling 46,000'.

Armament 6 cal. .50 guns, 297 rounds per gun.

Electric gyrolead computing gunsight with reflex optical system.

F80C

Power 1 Allison J33-A-23 [Model 400]

Speed Max. at sea level at combat power and weight (with water injection) 581 mph.

Max. at 25,000' [engine dry] 543 mph.

Cruising 450 mph.

Stalling [with flaps] 102.

" [without flaps] 113.

Better than 600 in speed run.

Range 1345-1470 miles.

Longest non-stop flight 1560 miles.

Combat mission endurance 3.20 hours.

Altitude absolute ceiling 48,000'.

Combat ceiling 44,100'.

39,000' fully loaded.

Rate of climb 5175 fpm.

Armament 2 1000 lb. bombs or 8 5"rockets.

6 110 gal. Napalm tanks.

6 cal. .50 guns, new version of M3 - increased fire-power.

Cost per flying hour $120.08.

 414

F82

SECRET

Designations F82, F82E, F82F.

Manufacturer North American.

Name Twin-Mustang.

Piston-engined twin-fuselage F51. Originally intended for long-range bomber escort work, it is now obsolete, though used to good effect in Korea.

F82E

Power 2 Allison V-1710-143/145.

1600 hp. each. 2300 hp. with water-injection.

Speed 475-486.

Range Max. ferring range 2500 miles.

Can carry 450 gal. external tank.

Combat range with full armament, 1600 miles.

Altitude Efficient operation up to 45,000'.

Armament 6 cal. .50 guns in center section. 400 rounds per gun.

Provision for 4 1000 lb. boms, or 2 2000 lb. bombs.

5 racks carrying 5 rockets each.

Guns increased to somewhere between 6 and 14 by May 1951.

Crew 2.

Cost per flying hour $96.49

F82F

Designed as night-fighter. Carries radar and radar operator.

Power 2 Allison V-1710-143/145.

1550 hp. each.

Speed 475-plus mph.

415

F82F (cont.)

Range 2500-plus miles.

Altitude 40,000'.

SECRET

F84

Designations F84B, F84E, F84F, F84G.

Manufacturer Republic

Name Thunderjet

Fighter-bomber, in service in Korea. Has carried out a great variety of fighter-bomber missions, with few losses. It is, however, outclassed by the MIG15, according to Capt. Jabara. F84E and F are scheduled for continuing production, presumably as fighter-bomber support aircraft.

F84B

Power GE TG-180.

Speed Prototype XP84 reached 611 mph. Unofficial speed 621 mph.

Range 1000-plus miles.

Altitude Service ceiling above 40,000'.

Armament

F84C

In service with National Guard Units.

Power Allison J-35-A-13.

F84D

Development of F84B.

Power Same as F84B.

SECRET

416

F84D (cont.)

Speed 578 mph. at 30,000'.

Range 1700 miles.

SECRET

Altitude Service ceiling 45,000'-plus.

Armament 6 cal. .50 guns. 8 140 lb. rockets.

F84E

Power Allison J35-A-17. 5000 lb. s.t. [J50].

Speed 600-625 mph.

578 mph at 30,000' [J49].

Range Combat radius 850 miles. With wing-tanks [450 gals. each] 1000-plus m.

In flight refuelling on non-stop trans-Atlantic flight, Sept. 1950.

Altitude Service ceiling over 45,000'.

Rate of climb 4600 fpm.

Armament 6 cal. .50 guns, 4 in nose, 2 in wings.

1800 rounds of ammunition.

Rocket or bomb loads up to total 4500 lbs.

Varying accounts of armament load: 32 HVAR 5" rockets, or

4 1200 lb Tiny Tim rockets, or equivalent in bombs, depth charges,

napalm.

Cost per flying hour, $117.00.

F84F

Swept-wing and tail version of F84E

fighter-bomber .

Power Allison J-35-A-25. 5200 lbs. s.t. No provision for afterburner.

Speed 630-650 mph.

Range 2 230 gal. wing tanks.

To carry heavy armament loads for long distances.

417

F84F

Altitude

Armament 6 cal. .50 guns.

Photograph of F84F carrying 18 5" rockets and 2 1000 lb. bombs, AA January 22, 1951, p. 14.

SECRET

Total load 8800 lbs.

Highly complex electronic fire control.

Note To be equipped with J65 Sapphire engine. [7200 lbs. s.t.).

Test flight of F84F with J65 successful on February 14, 1951.

RF84F

Reconnaissance - cameras in nose. For TAC.

Power Wright YF65 Sapphire [J65].

Speed "In excess of 700 mph."

Armament 6 installations for different type of cameras in nose.

F84G

Straight-wing. Designed for use with Boeing flying-boom. Refuelling in 2 1/2 minutes.

Power J-35-A-25, an improved model which gives 5600 lbs. s.t. Additional thrust through refusement of ejector.

Speed

Range Equipped for in-flight refuelling; takes 2 1/2 minutes greater than F84F.

Altitude Faster rate of climb than F84F.

Armament

418

SECRET

F86

Designations F86A, F86C, F86D, F86E, F86H.

Manufacturer North American.

Name Sabre.

The only AF fighter which can compare with the MIG15; though it is slower than the Russian aircraft above 30,000' (according to Capt. Jabara). It has an impressive record of victories over the MIG15. Its main role in Korea seems to be escort for B29 and B26 formations.

F86A

First production model.

Power 1 GE-J47-GE-1 5200 lb. s.t.

GE-J47-GE-9 " " "

Speed September 15, 1948, F86A with armament and combat equipment established record of 670.981 mph.

Unofficial record of 710 mph.

Average 640 mph on flight.

685 mph at sea level, 600 mph at 20,000'.

Slower than Russian MIG above 30,000', same speed below.

Range Tactical radius 535 miles, 800-900 with wing tanks.

Normal Cruise range 1250.

Ferry range with wing-tip tanks 2,350.

Slight advantage in range over Russian MIG.

Altitude Service Ceiling approximately 50,000'.

Max. rate of climb at sea-level 9400 fpm

at 30,000' 4600 fpm

F86A (cont.)

Armament 6 cal. .50 guns in nose.

Total of 1800 rounds of ammunition. SECRET

16 5" rockets.

Notes Turning radius at 450 mph is 2.9 miles.

Cost per flying hour $145.11.

F86C

Redesignated YF93A [q.v.]

F86D

Production version of this plane designated F95A. Redesignated F86D in August 1950.

All-weather fighter designed for quick climb.

Power 1 GE-J47-GE17 with afterburner.

Static thrust: 5200 lb. normal, 7000 at take-off with afterburner, 9000 top.

Speed 650-720 mph.

Range

Altitude Over 45,000'. Absolute Ceiling 54,000'.

Estimated rate of climb with afterburner 11,000 fpm.

40,000' in 5.6 min., 50,000' in 10.1 min.

Armament 6 cal. .50 guns. 24 "Mighty Mouse" rockets.

Fires radar-aimed rockets at 1000 yds.

Sperry zero reader to be installed

F86E

Converted for in-flight refuelling.

Refuelled in air from KB29F.

Average speed 635.11 mph on 100 Kil. race course, August 1951.

F86H

Power GE-J47-GE-29.

SECRET

Prototype contract received .

Outmatched Vampires and Meteors in test dog-fight.

F88

Designation XF88.

Manufacturer McDonnell.

Name Voodoo.

Designed as penetration fighters, fighter-bomber or bomber escort. ~~[illegible]~~ To go into production shortly for SAC.

Penetration fighter, fighter-bomber or bomber escort.

Swept-back wing.

Power 2 Westinghouse J-34-WE-22. 3000 lb. s.t. with afterburner (boosts s.t. 40%).

With afterburner 3600 lb. s.t.

Speed 700 mph class.

730 mph at sea-level.

Range 1725 miles.

Altitude Service ceiling 40,000'.

Rate of climb 6,000 fpm.

Specifications called for 50,000' in under 5 minutes.

Armament 6 20 mm. cannon.

421

SECRET

F89

Designations	F89A, F89B, F89C.
Manufacturer	Northrop.
Name	Scorpion.
	Twin-jet, two-seat, all-weather fighter. Apparently in high production. The AF has ordered F89 link-trainers to the value of $6,000,000. Probably the plane is to be the first-line air defense fighter.

F89A

Power	Allison J-35-A-21. 5000-6000 lb. s.t. with afterburner. Can operate on one engine.
Speed	Over 600 mph.
Range	Probably on the order of 2000 miles.
Altitude	Operates o.k. above 40,000'. Rate of climb 5000 fpm.
Armament	6 20 mm. cannon around nose. 16 5" rockets. Photograph of armament system mockup, AW, March 19, 1951, p. 50. Crew of 2, heavy radar.

F89B

Reported coming off the assembly line.

F89 series is through E in first models of subsequent versions in process of manufacture.

XF90

Designations	XF90
Manufacturer	Lockheed.

SECRET

422

XF90 (cont.)

Twin-jet penetration fighter. Apparently no production is planned. First flight June 4, 1949.

SECRET

Power	2 Westinghouse J46-WE-3 [J50] 6000 lb. s.t. each.
Speed	650-700 mph. Approx. Mach 1.5.
Range	1470 miles, & 2000 miles with wing tanks above 40,000'.
Altitude	Service ceiling 40,000'.
Armament	4 20 mm. cannon or 6 radar installations in nose.

XF91

Manufacturer	Republic
	High-speed interceptor. Completed phase one flight tests January 11, 1950. Apparently not to go into production.
Power	GE J-47 turbojet with afterburner and 4 rocket motors. GE J-47 develops 5200 lb. s.t. Rocket motors (Reaction Motors) 6000 lb. s.t. at sea level.
Speed	Max. 800-plus.
Range	2 500 gal. external tanks added.
Altitude	Service ceiling 50,000'-plus. "Very high rate of climb." Best performance at 35,000'.
Armament	

XF92A

Manufacturer	Convair.
	Experimental delta-wing jet fighter. Sweep of wings 60°. Has gone to Muroc to join supersonic research program.

SECRET

XF92A (cont.)

SECRET

Power	Originally Allison J33-23. 5200 lb. s.t.
	New model J-33-29 with afterburner developing 8000 lb. s.t.
Speed	Max. 725 mph. at 50,000'.
	Minimum speed 110 mph.
Range	Fuel capacity 295 gals.
Altitude	Service ceiling 40,000'-60,000'.
	Rate of climb 12,000 fpm.

YF93A

Modification of F86A. Structural and power-plant changes. Long-range single-seat penetration fighter. Not going into production. Both prototypes turned over to NACA Flight Tests Laboratory at Edwards AFB .

Power	P & W J-48-P6. 6250 lbs. s.t.
	8000 lbs. s.t. with afterburner.
Speed	650-plus mph. at sea level.
Range	
Altitude	50,000'.
Armament	

F94

Designations	F94A, F94B, F94C, F94D.
Manufacturer	Lockheed.
Name	

F94 (cont.)

This two-seat, all-weather fighter is a modified version of the T33 jet trainer. It carries a radar operator and 3000 lbs. of radar equipment. It has ~~not~~ been reported in action in Korea. It is in production and is perhaps intended for air defense operations.

F94A

Power	Allison J33-A-33 with Solar afterburner.
	5400 lbs. s.t. with water-injection, 4600 lbs. dry, 3900 lbs. normal. 6000 hp.
Speed	Max. 607 at sea level.
	Stalling 122 mph.
Range	1080 miles.
	Fuel capacity 648 gals.
	Combat radius without wing-tanks 500 miles.
Altitude	Sercvice ceiling 45,000'-48,000'.
	Rate of climb 7,350 fpm with afterburner.
Armament	4 cal. .50 guns.
	Rockets or bombs under wings up to 4500 lbs.
	Radar-equipped for night operations.
	"Mighty-Mouse" air-to-air rockets.
Note	Scale cut-away diagram [AW, June 26, 1950, p. 13].

F94B

	Lockheed began tests January 27, 1950.
Power	P & W J-48 turbojet.
Range	Wing-tip fuel tanks.

425

SECRET

F94C

Power	P & W J-48 with afterburner.
	s.t. (dry) 6250-plus lbs.
	8000 lbs. with afterburner.
Speed	600-plus mph at sea level.
Range	No fresh data.
Altitude	Service ceiling 45,000'-plus
Armament	Automatic radar gunsight
Note	To have new electrical autopilot.

F94D

Proposed model to serve as ground-support tactical fighter single-seat to carry extra fuel instead of radar equipment.

Power J-48.

F95A

See F86D.

YF96

Republic.

Jet fighter. Completed first phase flight testing July 11, 1950.

F97

See F94C.

TRANSPORTS

SECRET

C45

Designation	C45.
Manufacturer	Beech.
Name	Expediter.
Power	2 P & W R-985. 450 hp. each.
Speed	Max. 225 mph.
Range	1200 miles.
Altitude	Service ceiling 26,000'.
Load	Crew 2, passengers 5.
Remarks	AF plans to re-manufacture 933 C45s for use as twin-engine trainers, administrative or light cargo planes. Work to be done by Beech.

C46

Designation	C46.
Manufacturer	Curtiss.
Name	Commando.
	Medium-range military transport.
Power	2 P & W R-2800-51. 2000 hp. each.
Speed	Max. 265 mph.
Range	Tactical range over 1600 miles.
Altitude	Service ceiling 24,500'.
Load	Crew 4.
	Cost per flying hour, $57.50.
Ramarks	Loading time (Exercise Swarmer) 40 minutes.
	Unloading time (Exercise Swarmer) 30 minutes.

SECRET

 427

C46 (cont.)

SECRET

Remarks (cont.) CAB cuts gross operating weight of civilian model by 2200 lbs. down to 45,000. Will cut 2300 lbs. more next year. Claims deficient single-engine performance [July 30, 1951].

C47 [C53]

Designations	C47, C53. [DC3, DC3A]
Manufacturer	Douglas.
Name	
Power	2 P &W R-1830-92.
	1050 hp. each at 7500'.
	1200 hp. each for take-off.
Speed	229 mph at 8500'.
Range	Normal 1500 miles.
Altitude	Service ceiling 24,100'.
	initial rate of climb 1170 fpm.
Load	6000 lbs or 28 paratroops or 18 litters.
	Crew of 3.
	Cost per flying hour $37.63.

C54

Designations	C54, C54G, C54M.
Manufacturer	Douglas.
Name	Skymaster.

C54

Power	4 P & W R-2000-7.
	1100 hp. at 7000', 1000 [illegible] - 14,000', 1350 hp. for take-offs.

SECRET

C54 (cont.)

SECRET

Speed	Max. 274 mph. at 14,000'.
	Cruising 239 mph at 15,000'.
Range	Normal. 1500 miles with 16,500 lbs. at 220 mph. at 10,000'.
	Max. 3900 miles with 5400 lbs. at 190 mph. at 10,000'.
Altitude	Service ceiling 22,500'.
Load	Crew of 6.
Remarks	Cost per flying hour $97.71.
	Loading time (Swarmer) 55 minutes.
	Unloading time (Swarmer) 35 minutes.

C54G

Power	4 P & W R-2000-9. 1450 hp. each.
Speed	Max. 308 mph.
Range	1900 miles.
Load	29,000 lbs. or 49 troops or 36 litters plus 4 attendants.
	Crew 5.

C54M

32-litter evacuation plane.

C74

Designations	C74.
Manufacturer	Douglas.
Name	Globemaster I.
Power	4 P & W R-4360-49. 3250 hp. each. 3500 hp. each for take-off.
Speed	Max. 303 mph.
	Cruising 300 mph.

SECRET

C74 (cont.)

Range	Max. 7800 miles.
	Normal 7000 miles.
	Max. fuel capacity 11,000 gals.
Altitude	Service ceiling 18,000'.
Load	125 troops or 115 litters.
	Total 49,107 lbs.
	Among items which can be loaded are 2 T-GE1 tanks, 2 75 m. or 105 m. howitzers with tractors. 2 or 3 single-engine fighter aircraft disassembled.
	Crew 9 plus 4 relief.
Remarks	Cost per flying hour $237.45.
	Loading time (Swarmer) 1 hour, 45 minutes.
	Unloading time (Swarmer) 45 minutes.

C82

Designations	C82A.
Manufacturer	Fairchild.
Name	Packet.
	Assigned to TAC and MATS.

C82A

Power	2 P & W R-2800 -85. 2100 hp. each.
Speed	Specifications call for Max. 238 mph with 50,000 lbs. at 17,500'.
Range	Maximum 3900 miles (Specification).
	Combat radius 1000 miles.
	Fuel capacity 2614 gals.

430

C82A (cont.)

SECRET

Altitude	Service ceiling 22,000'.
	Rate of climb 800 fpm.
Load	18,000 lbs. or 42 paratroops with equipment or 36 litters.
	105 mm. cannon parachuted from C82A.
	Crew 4.
Remarks	Cost per flying hr. $79.27.
	Loading time (Swarmer) 35 minutes.
	Unloading time (Swarmer) 25 minutes.

C97

Designations	C97A, C97B, C97C, KC97A, KC97E.
Manufacturer	Boeing.
Name	Stratofreighter.

C97A

Power	4 P & W R-4360-27.
	3500 hp each at take-off.
Speed	Max. 344 at 25,000'.
	Cruising speed 300-plus mph.
Range	4000 - 5000 miles, 3750 miles with 41400 lbs.
Altitude	Service ceiling 30,000' - 40,000'.
	Rate of climb 1040 fpm.
Load	45,000 to 53,000 lbs.
	134 troops or 83 litters.
Remarks	Cost per flying hour $272.40.

431

Passenger version of C97A.

80 passengers plus 17,000 lbs. of cargo. SECRET

C97C

Strengthened fuselage permits additional 1 ton load.

Landing gear interchangeable with B50.

KC97A

Aerial tanker.

Convertible to C97 in 6 hours.

KC97E

Aerial tanker, troop transport or hospital ship assigned to SAC.

First delivery to AF July 1951.

XC99

Designation	XC99.
Manufacturer	Consolidated Vultee.
Name	Transport counterpart of B36. Same wings, power-plant, landing-gear and tail unit.
Power	6 P & W R-4360-41. 3500 hp. each.
Speed	Max. 300-plus mph.
Range	8100 miles.
Altitude	Service ceiling 30,000'.
Load	100,000 lbs. or 400 troops or 305 litters.
	Crew 5

Carried 85,000 lbs. non-stop across the continent (22,000 air miles).

SECRET

432

XC99 (cont.)

Remarks	No further production contemplated.
One produced.

C118

Designations	C118 [DC6].
Manufacturer	Douglas
Name	
Power	4 P & W R-2000-7 or 11.
	1100 hp. each at 7000'.
	1000 hp. 7000' - 14,000'.
	1350 hp. for take-off.
Speed	Max. 274 mph at 14,000'.
	Cruising 239 mph at 15,200.
	Stalling 88 mph.
Range	1500 miles at 220 mph at 10,000' with 16,500 lbs.
Altitude	Service ceiling 22,500'; on three engines 17,300'.

C119

Designation	C119, C119B, C119C, C119H.
Manufacturer	Fairchild.
Name	Packet
	Modification of C82A.

C119B

Power	2 P & W R-4360-20.
	2650 hp. up to 6000'.

C119B (cont.)

SECRET

Power (cont.) 2300 hp. at 18,000'

3250 hp. for take-off.

2 P & W R-4360-20W.

3500 up for take-off.

Speed (Specification) 266 mph at 18,000'.

Top speed 258 mph.

Cruising 177 mph.

Range Combat radius 1152 miles.

(Specifications) with ~~18240 lbs 920 miles~~.

" 18,400 lbs. 500 miles.

" 15,000 lbs. 750 miles.

" 11,540 lbs. 100 miles.

Altitude Service ceiling 23,500'.

(Specification) 23,900'.

" Single-engine ceiling 8700'.

Rate of climb 800' first minute.

~~(Specification) rate of climb 1040 fpm~~

Load 30,000 lbs., or 64 paratroops, or 35 litters.

(Specification) max. 36,309 lbs.

Crew 5.

155 mm. howitzer loaded intact.

Remarks Loading time (Swarmer) 45 minutes.

Unloading time (Swarmer) 30 minutes.

C119C

Mass production version of C119B.

Power 2 compounded Wright R-3350-30 WA.

3250 hp. (dry) for take-off.

434

SECRET

C119C (cont.)

Speed	Cruising speed 135 knots.
Range	Normal 650 miles.
Altitude	Service Ceiling (2 engine) 22,900'.
	" " (1 engine) 5,000'.
	Rate of climb 930 fpm.
Remarks	Removable armor for crew.

C119H

Power	As above.
Speed	Lower minimum speed.
Range	1500 miles with 25,000 lbs.
Altitude	
Load	25,000 lbs.
Remarks	Ready for test flight early in 1952.
	40% greater wing area wingspan 148'.
	Shorter take-off run.
	Improved single-engine performance.

XC120

Designations	XC120
Manufacturer	Fairchild.
Name	Pack Plane.
Note	Adaptation of C119B utilizing detachable cargo pod.
Power	2 P & W R-4360. 3,250 hp. each.
Speed	Top 250-plus mph.
Range	Combat radius 1152 miles.

SECRET

435

SECRET

XC120

Altitude	Service ceiling 23,500'.
Load	20,000 lbs. or 64 troops or 36 litters.
	Crew 5.

C121

Designations	C121, C121C.
Manufacturer	Lockheed.
Name	Constellation.
Power	4 Wright Cyclone GR-3350-BD1. 2500 hp. each.
Speed	Top 343 mph.
	Cruising 328 mph to 365 mph.
Range	5,100.
Altitude	Service ceiling 27,800'
Load	47,891 lbs.
	Crew 5 with 4 relief.

C121C

"Military super-constellations."

Pressurized for 30,000' altitudes, 76-110 passengers.

Capable of using reciprocating, compound and turbo-prop engines.

YC122

Designations	YC122, YC122C.
Manufacturer	Chase.
Name	Avitrue.
	Troop and cargo-carrying transport.

436

SECRET

XC122C

Power	2 Wright R1820-101.
	take-off 1425 hp.
	normal 1275 hp.
Speed	240 mph. max.
	Cruising 200 mph.
	Stalling 75 mph.
Range	2900 miles.
	With max. load 1000 miles.
	With wing tanks 4,540 miles.
Altitude	Service ceiling 29,100'.
	Initial rate of climb 1340 fpm.
Load	Normal useful load 13,00 lbs. or 30 troops with equipment.
	Crew 2.

C123

Designation	XC123, C123.
Manufacturer	Chase. Kaiser-Frazer ~~[illegible]~~
Name	Avitruc.
Note	Troop and cargo-carrying transport for short or unprepared landing fields. Can be operated as glider with or without power plants ~~[illegible]~~ To be produced in quantity.
Power	2 P & W R-2800-CB-14. 1900 hp.
	modified to 2 P & W R-2800-CB-15. 2400 hp.
Speed	Max. 245 mph. [For both engines].
	Cruising 215, stalling 75.
	Slow landing, fast take-off.

C123 (Cont.)

Range	2110 miles, 3110 with extra tanks.
Altitude	Service ceiling 29,000'.
	Rate of climb 1250 fpm.
Load	27,200 lbs. or 60 troops with equipment or 50 litters, six walking wounded and six medics.
	Crew 2.
Note	Jet version recently test-flown.

C124A

Designations	C124A, YC124B.
Manufacturer	Douglas.
Name	Globemaster II.
Note	Modification of C74.
Power	4 P & W R-4360-20W. 3500 hp. each.
Speed	Max. 298 mph at 20,800'.
	Cruising 264 mph at 13,600'.
	Stalling 99.5 mph with 160,000 lb. gross.
Range	6280 miles.
	5240 nautical miles.
	Combat radius 1000 miles with 50,000 lb. load.
	Fuel capacity 11,110 gals.
Altitude	Service ceiling fully loaded 22,050'.
	Rate of Climb 800 fpm.
Load	76,000 lbs. or 200 troops and equipment or 127 litters.
	Carried 70,000 lbs. for 1000 miles.

C124A (cont.)

Remarks — Nose opening for loading cargo 130" x 140" high.

Will accomodate 94% of all AF and GF equipment.

SECRET

YC124B

Turbo-prop version of C124.

Contract awarded.

Power — 4 P & W YT-34-P-1 turbo-prop. 5500 hp. each.

Speed — Increase over C124A.

Range — Increase over C124A.

Altitude — Increase over C124A.

Rate of climb increase over C124A.

Load — Increase over C124A.

Note — Increase in take-off distance.

C125

Designation — XC125, C125A, C125B.

Manufacturer — Northrop.

Name — Raider.

Assault transport.

Note — C125B Artic rescue aircraft.

Power — 3 Wright R-1820-99. 1425 hp. each.

Speed — Top 207 mph.

Cruising 170-200 [HT. July 28, p. 5].

Range — 1856 miles.

Altitude — Service ceiling 25,000'-plus.

Load — 20,000 lbs.

Crew C125A 3 C125B [illegible]

SECRET

439

YC129

Designation	YC129.
Note	Super DC3.
Power	2 Wright R-1820-CGHE.
	Photograph, AW, March 5, 1951, p. 9.

SECRET

HELICOPTERS

H5

Designations	H5.
Manufacturer	Sikorski.
Name	
Power	1 P & W R-985-B4. 450 hp.
Speed	Top 103 mph. at sea level.
	Cruising 85 mph. at 1,000'.
Range	Normal 276 miles.
Altitude	Service ceiling 13,000'.
	Absolute ceiling 14,500'.
	Hovering ceiling 5,000'.
	Rate of climb vertical 200 fpm. Max. 1,000 fpm.
Load	1505 lbs. Pilot and three passengers.
	Two litters and one attendant.
	Cost per flying hour $40.54.

H12

Designations	H12.
Manufacturer	Bell.
Name	
Power	1 P & W R-1340-55. 600 hp.
Speed	Top 120 mph.
Range	300 miles.
Altitude	Service ceiling 10,000'.
	Absolute ceiling 11,000'.
	Hovering ceiling 3,350'.

441

H12 (cont.)

SECRET

Load — Can carry 8 fully equipped troops.

Remarks — 11 ordered by AF by November 1, 1950.

H18

Designations — H18.

Manufacturer — Sikorski.

Name

Power — 1 Franklin 6V6-245-B16F. 245 Hp.

Speed — Max. 111 mph.

Cruising 96 mph.

Range — 306 miles.

Fuel cap. 62 gals. [J50].

Altitude — Absolute ceiling 13,000'.

Hovering ceiling 2,600'.

Max. rate of climb at sea level 1,300'.

Load — Seats 4.

Normal 750 lbs.

H19

Designations — H19.

Manufacturer — Sikorski.

Name

Power — 1 P & W R-1340-57. 600 hp. 550 hp. at 5,000'.

Speed — Max. 103 at sea level.

Cruising 86 mph. at 1,000'.

Range — [illegible]

442

H19 (cont.)

SECRET

Altitude	Service ceiling 13,500'.
	Absolute ceiling 16,500'.
	Hovering ceiling 9,000'.
	Rate of climb at gross wt. and sea level 1,100 fpm.
Load	2800 lbs.
	12 seats.
	8 stretchers.

H21

Designations	H21.
Manufacturer	Piasecki.
Name	Flying Banana.
	Arctic rescue version of Navy HRP-2.
Power	1 Wright R-1820-76A. 1425 hp.
Speed	Top speed 130 mph.
	Cruising 104 mph.
Range	610 miles.
Altitude	Service ceiling 16,000'.
Load	Seats up to 20 troops, 27 in emergency.
	Special landing gear for snow, ice, land, water, marsh, tundra.

TRAINERS

T6

Designations	T6, T6G.
Manufacturer	North American.
Name	Texan
	T6G is a "re-manufactured T6."
Power	1 P & W R-1340-AN1. 550 hp. [G] 600 hp.
Speed	Max. 205 mph at 5,000'.
	Cruising 170 mph. at 500'.
	[G] top 212 mph.
Range	750 miles.
	[G] 870 miles.
	Fuel capacity 140 gals.
Altitude	Service ceiling 21,500'.
	[G] Service ceiling 24,750'.
Armament	3 cal. .30 guns.
	Cost per flying hour $13.84.

TB25

Designations	TB25.
Manufacturer	North American.
Name	Mitchell.
Power	2 Wright R-2000. 1700 hp.
Speed	275 mph.
Range	1,500 miles.

444

TB25 (cont.)

SECRET

Altitude	Service ceiling 28,000'.
	Crew 6.
Remarks	For twin-engine training and proficiency flying.

T28

Designations	TB28.
Manufacturer	North American.
Name	
Power	1 Wright R-1300-1. 800 hp.
Speed	Max. at 5,000' 288 mph.
	Cruising 166 mph.
	Stalling 72 mph.
Range	1008 miles.
	Fuel capacity 125 gals.
	600 gal. auxiliary tank.
Altitude	Service ceiling 29,800'.
	Rate of climb 2570 fpm.
Remarks	Advanced trainer to replace T6. [AYB]
	Tricycle landing gear. [AYB]

T29

Designations	T29.
Manufacturer	Consolidated Vultee Aircraft.
Name	
	Adaptation of Convair-Liner 240 to navigational trainer.

445

SECRET

T29 (cont.)

Power	2 P & W R-2800 CA-18. 2400 hp.
Speed	Max. 347 mph.
	316 mph. at 13,500'.
Range	Max. 920 miles.
	Fuel capacity 1,000 gals.
Altitude	Service ceiling 30,000'.
Remarks	14 stations for navigation students.

YT31

Designations	YT31.
Manufacturer	Fairchild.
Name	
Power	1 Lycoming R-680-13. 295 hp.
Speed	Max. 166 mph.
	Cruising 142 mph.
Range	900 miles.
	900 miles at 110 mph.
Altitude	Service ceiling 19,500'.
	Crew 2.

T33A

Designations	T33A
Manufacturer	Lockheed.
Name	Shooting Star.
	Jet training version of F80.

SECRET

T33A (cont.)

Power	1 Allison J-33-A-23. 5200-5400 lbs. s.t. No afterburner.
Speed	600 mph.
	Stalling 117 mph.
Range	Normal 1345 miles.
	Fuel capacity 683 gals.
Altitude	Service ceiling 45,000'-plus.
	Rate of climb 5,250 fpm.
	Crew 2.
Armament	2 cal. .50 guns.

SECRET

YT34

Designations	YT34.
Manufacturer	Beech.
Name	Mentor.
	AF trainer development of Beech Bonanza.
Power	1 Continental E-225-8. 225 hp.
Speed	188 mph. at sea level.
	Cruising 165 mph. at 10,000'.
Range	770 miles.
	Fuel capacity 50 gals.
Altitude	Service ceiling 21,200'.
	Crew 2.

YT35

Designations	YT35.
Manufacturer	Temco.
Name	Buckaroo.

SECRET

447

SECRET

YT35 (cont.)

Power	1 Franklin 6AF-165-B3. 165 hp.
Speed	150 mph.
Range	550 miles.
	Fuel capacity 33 gals.
Altitude	Service ceiling 17,000'.
	Crew 2.

T36

Designation	T36.
Manufacturer	Beech - Canadair.
Power	2 P & W radial.
	R 2800.
Ramarks	300 ordered to be built in Canada.
	For training on 2-engine.
	Convertible to utility transport.
	With 11 passengers.

TB50D

Navigator-bombardier trainer.

First deliveries to AF April 1951.

Last phase of B50 program.

T51

Converted F51 to two-place trainer. [F51s from mothballs].

Speed top 400 mph.

448

LIAISON

SECRET

L5

Designation	L5.
Manufacturer	Convair.
Name	Sentinel.
Power	1 Lycoming O-485. 185 hp.
Speed	130-plus mph.
Range	Combat radius over 160 miles.
Altitude	Service ceiling 15,000'.
	Crew 1.
	Rescue and liaison operation.

LC126

Designations	LC126
Manufacturer	Cessna.
Name	
Power	1 Jacobs. 300 hp.
Speed	over 165 mph.
Range	over 750 miles.
Altitude	Service ceiling 18,300'.
	Crew 1. 4 passengers.
	Used by AF and ANG for search and rescue.

SECRET

449

SECRET

EXPERIMENTAL

X1

Manufacturer	Bell.
Power	1 Reaction Motors Model 6000C rocket engine.
	6,000 lbs. s.t.
Speed	Max. Mach. 1.46. V-max. 960.
	Designed for 1600 mph. at 60,000'.
	Max. 1000 mph at 60,000'.
	Minimum speed (light) 127, heavy 160.
Range	Flight duration 4.2 minutes at full power.
	Fuel load 5400 gals.
Altitude	Absolute ceiling 74,000'.
	Max. climb 26,000 fpm.
	Carried aloft by B17.

X1A

Manufacturer	Bell.
Power	
Speed	Max. Mach. 1.5-plus. V-max. (mph. TAS) 1,000-plus.
	Designed for 1,700 mph. at 80,000'.
	Minimum speed (light) 120, heavy 180.
Range	Flight duration 4.2 minutes at full power.
	Full load 8,177 gals.
Altitude	Ceiling for B-max. 85,000'.
	Absolute ceiling 105,000'.
	Max. climb 34,000 fpm.

X2

Manufacturer	Bell
	To explore problems of trans-sonic and supersonic flight.
Power	1 Reaction Motors rocket engine.
	[Reports of Curtiss engine with 15,000 lbs. s.t. (5,000 from one cylinder, 10,000 from the other)].
Speed	Max. Mach. 2.0.
	V-max. TAS mph. 1320.
	Ceiling for V-max. sea level.
Range	Fuel load 1500 gals.
Altitude	Absolute ceiling 49,000'.
	Maximum climb 7,500 fpm.
	Minimum speed light 130, heavy 150.

X3

Manufacturer	Douglas.
Power	"Over 60 combinations of engine and configuration examined."
	[illegible]
Speed	Max. Mach. 3.0.
	V-max. mph. TAS 1970.
	Ceiling for V-max. 100,000'.
Range	Fuel load 15,000 gals.
Altitude	Absolute ceiling 250,000'.
	Max. climb 50,000 fpm.

X4

SECRET

Manufacturer	Northrop.
	Designed for stability and control investigations.
Power	2 Westinghouse J-30 gas turbine. 1600 lbs. s.t. each.
Speed	In subsonic range.
	Designed to fly in 650 mph. zone at sea level.
	Photograph [AF, October 1949, p. 37.]
	20' long. Wing-span 25'.

X5

Manufacturer	Bell.
Power	Allison J-35-A-17. 4900 lbs. s.t.
Remarks	"Will begin tests soon." AAD, June 13, 1951, p. 267.

452

SECRET

SUBSECTION IV

AIR FACILITIES

453

SECRET

A

ZONE OF THE INTERIOR

454

TABLE I SECRET

LIST OF USAF AIRFIELDS (ZONE OF INTERIOR).
(as of 1 July, 1951)

In all cases the listing is under the name of the airfield and not the name of the city. E.g. Hanscom Field, Mass (not Boston-Bedford), O'Hare-Chicago International (not Chicago).

Where the name of the field and the name of the city are the same, the name of the city is not repeated.

The second column indicates, so far as the information has been found, what command or commands are using any given field.

The third column indicates, so far as the information is known, how many runways a given field has, the maximum runway length (in feet), and the runway strength in terms of pounds. This factor is indicated by a single letter, as follows:

L - up to 10,000 lbs. runway strength
M - up to 30,000 lbs. " "
H - up to 65,000 lbs. " "
V - up to 100,000 lbs. " "
X - up to 150,000 lbs. " "
Y - up to 200,000 lbs. " "
Z - up to 300,000 lbs. " "

The fourth column contains various information, including a statement of what planes have Ground Controlled Approach facilities (GCA), jet fuel facilities (jf), or instrument landing system.

Information as to units which are posted at various fields is given under the deployment information for SAC, TAC, ADC, and MATS.

Alexandria AFB La.		4 r; 7000	jf
Amarillo Air Terminal Tex.	ATRC	3 r; 6000	
Andrews AFB Camp Springs, Md.	ADC SAC MATS	4 r; 7000; H	GCA; jf
Atterbury AFB Columbus, Ind.	TAC	2 r; 5000; H	
Baer Fort Wayne, Ind.	ADC	3 r; 6000	
Barksdale AFB Shreveport, La.	ATRC ADC SAC	1 r; 10,000; V	GCA; jf; Instr.Landing System
Bartow Fla.	ATRC	3 r; 5000	

Bergstrom AFB Austin, Tex.	TAC	5 r; 7100	GCA; jf
Berry Nashville, Tenn.		5 r; 5500	
Big Spring Air Term. Tex.			
Biggs AFB El Paso, Tex.	TAC SAC	3 r; 9600; H	GCA; jf
Birmingham NAS Ala.	ADC	3 r;5700; V	
Boise Air Terminal Ida.		4 r; 7700	
Bolling AFB Washington, DC.		2 r; 6000; H	
Blackland AFB Aux. Valley Mills, Tex.		allway field; 5100	
Bradley Windsor Locks, Conn.		3 r; 5100	
Brookley AFB Mobile, Ala.	AMC MATS	4 r; 8900; Y	GCA
Brooks AFB San Antonio, Tex.	ADC	3 r; 5200; H	
Broome AF Aux. San Angelo, Tex.	ATRC	2 r; 3600	
Bryan AFB Tex.	ATRC	3 r; 5500; M	
Buckley (Denver NAS) Denver, Colo.	TAC	2 r; 8000	
Burbank Lockheed Air Term. Cal.		2 r; 6000	jf
Burlington Mun. Airpt Vt.	ADC	3 r; 5000	
Burton AF Aux. Ambrose, Tex.		allway field; 3500	

SECRET

Byrd Richmond, Va.	ADC	3 r; 5100	
Camp Wolters Mineral Wells, Tex.			
Campbell AFB Hopkinsville, Ky.	SAC	4 r; 8000; X	GCA
Carswell AFB Ft. Worth, Tex.	SAC	1 r; 8200; Z	GCA; jf
Casa Grande AF Aux. Ariz.	ATRC	4 r; 3700; M	
Castle AFB Merced, Cal.	SAC	1 r; 7000; X	GCA
Chanute AFB Rantoul, Ill.	ATRC ADC	3 r; 6300; H	jf
Cheyenne Wyo.		3 r; 7700	
Clear Springs Aux. New Braunfels, Tex.	ATRC	3 r; 5400; M	
Clovis AFB N.Mex.	TAC	4 r; 10,000; M	
Columbus AFB Miss.	ATRC	4 r; 4500	
Columbus AF Aux. Miss.	ATRC INAC	1 r; 5000	
Connally AFB Waco, Tex.	ATRC	5 r; 6400; H	
Craig AFB Selma, Ala.	ATRC	7 r; 5200; M	
Davenport AF Aux. San Antonio, Tex.	ATRC	allway field; 3400	
Davis-Monthan AFB Tucson, Ariz.	SAC ADC	4 r; 7900; H	jf
DeSoto Parish Mansfield, La.	ATRC	4 r; 5100	
Dobbins Marietta, Ga.			

SECRET

Donaldson AFB Greenville, S.C.	TAC	3 r; 5500; H	
Dover, AFB Del.	TAC ADC	3 r; 7000; H	
Dow AFB Bangor, Me.	ADC	3 r; 7000; X	jf
Duluth Mun. Airpt Minn.		3 r; 5700	
Edwards AFB Muroc, Cal.	AMC	2 r; 8100; X	jf
Eglin AFB Valparaiso, Fla.	APG	3 r; 8000; X	GCA; jf
Eglin AF Aux. #2 Valparaiso, Fla.		3 r; 8000; H	
Eglin AF Aux. #3 Valparaiso, Fla.		3 r; 8000; H	
Ellington AFB Houston, Tex.	ADC ATRC	6 r; 5200; M	GCA
Ent AFB Colorado Springs, Colo.	ADC		
Ephrata Washington	SAC AMC	3 r; 7300	
Fairchild AFB Spokane, Wash.	SAC	3 r; 8000; H	GCA
Fairfax Kansas City, Kan.	ADC	4 r; 6500	
Floyd Bennett (New York NAS) New York		4 r; 5500	jf
Forbes AFB Topeka, Kan.	SAC	3 r; 6500; H	
Friendship Internat'l Arpt Baltimore, Md.	ARDC	3 r; 9500	
Gaskin AF Aux. Dorchester, Tex.	ATRC	2 r; 4000; L	
Geiger Field Spokane, Wash.	ADC	3 r; 8200	jf

SECRET

General Spaatz Reading, Pa.	ADC	3 r; 5200	
George AFB Victor, Cal.	AMC ADC	7 r; 7400; H	jf
Gibbons AF Aux. Sherman, Tex.	ATRC	allway field; 4800	
Gilbert AF Aux. Ariz.	ATRC	2 r; 4000	
Godman AFB Ft. Knox, Ky.	ADC	4 r; 5200; L	jf
Goodfellow AFB San Angelo, Tex.	ATRC	3 r; 5500; M	jf
Goodyear AF Aux. Ariz.		2 r; 5500; M	
Grandview Airpt. Kansas City, Mo.			
Gray AFB Camp Hood, Tex.		1 r; 8400; X	
Great Falls AFB Mont.	MATS	4 r; 8900; M	GCA; jf
Greater Pittsburgh Coraopolis, Pa.	ADC	3 r; 6000; V	jf
Greenville AFB Miss.	ATRC	5 r; 4500; H	
Grenier AFB Manchester, N.H.	SAC ADC	3 r; 7000; X	
Griffiss, AFB Rome, N.Y.	ADC AMC	3 r; 6300; V	jf
Gunter AFB Montgomery, Ala.	AU	4 r; 3800; M	
Hamilton AFB San Rafael, Cal.	ADC	1 r; 6300; M	
Hanscom Field Mass.	ADC	3 r; 5000; X	jf
Hensley (Dallas NAS)	ADC	3 r; 7500; H	

SECRET

Hill AFB Ogden, Ut.	AMC ADC	4 r; 7500; M	jf
Holloman AFB Alamogordo, N. Mex.	AMC ARDC	3 r; 8400; H	jf
Holman St. Paul, Minn.	ADC	4 r; 5500	
Hondo AFB Tex.	ATRC	4 r; 6100	
Hunter AFB Savannah, Ga.	SAC	2 r; 7000	GCA; jf
Indianola AF Aux. Miss.		3 r; 4500	
Kearney AFB Nebr.	SAC		
Keesler AFB Biloxi, Miss.	ATRC	2 r; 6500; H	
Kegelman AF Aux. Cherokee, Okla.		2 r; 5500; V	
Kell Wichita Falls, Tex.		4 r; 5500	jf
Kellogg Battle Creek, Mich.		4 r; 4800	
Kelly AFB San Antonio, Tex.	AMC MATS	5 r; 7500; H	GCA; jf
Kirtland AFB Albuquerque, N. Mex.	AMC	4 r; 10,200; M	Instr.Land.Syst.; jf
Laguna Landing Strip Ariz.		2 r; 5000	
Lake Charles AFB La.	SAC	4 r; 6200	
Lambert St. Louis, Mo.		3 r; 6000	
Langley AFB Va.	TAC	2 r; 7000; V	GCA; jf
Larson AFB Moses Lake, Wash.	SAC AMC ADC	2 r; 10,000; X	GCA; jf

SECRET

Las Vegas B & G Range #5 Tonopah, Nev.	ATRC	2 r; 5000	
Lawson AFB Columbus, Ga.	TAC	3 r; 5900; M	jf
Limestone AFB Me.		1 r; 9200	GCA
Lincoln Nebr.		5 r; 7100	jf
Lockbourne AFB Columbus, O.	TAC	3 r; 5500; V	jf
Long Beach Cal.	ADC	5 r; 6900	
Lowry AFB Denver, Colo.	ADC ATRC	2 r; 8300; M	jf
Luke AFB Phoenix, Ariz.	ATRC	5 r; 8500; M	jf
Luke AF Aux. #1 Wittman, Ariz.		4 r; 3900; L	
Luke AF Aux. #2 Beardsley, Ariz.		4 r; 3900; M	
Luke AF Aux. #3 Beardsley, Ariz.		4 r; 3900; L	
Luke AF Aux. #4 Wittman, Ariz.		3 r; 3800; L	
Luke AF Aux. #5 Buckeye, Ariz.		3 r; 3800; M	
Luke AF Aux. #6 Buckeye, Ariz.		3 r; 3800; M	
Luke AF Aux. #7 Arlington, Ariz.		2 r; 3800; M	
McChord AFB Tacoma, Wash.	TAC ADC MATS	3 r; 5900; X	GCA; jf
McClellan AFB Cal.	AMC	3 r; 7000; V	jf
MacDill AFB Tampa, Fla.	ADC SAC	4 r; 10,000; X	GCA; jf

SECRET

 461

McGhee-Tyson AFB Knoxville, Tenn.		2 r; 5000	
McGregor AF Aux. Waco, Tex.		3 r; 5500; M	
McGuire AFB Ft. Dix, N.J.	SAC ADC	3 r; 8200; V	GCA; jf; F94's here on 24 hr. alert
Madison Wis.		4 r; 6000	jf
March AFB Riverside, Cal.	TAC SAC	4 r; 7000; X	GCA; jf
Martindale AF Aux. San Antonio, Tex.	ATRC	2 r; 3000; M	
Matagorda Island AFB Tex.	ATRC INAC	4 r; 6000; H	
Mather AFB Cal.	ATRC	4 r; 7500; V	GCA
Maxwell AFB Ala.	AU	4 r; 7000; V	GCA; jf
Medford Ore.	AMC	2 r; 5400	jf
Memphis Tenn.	ADC TAC	4 r; 6500; M	jf
Miami-International Fla.	ADC	4 r; 8700; X	jf
Midway Chicago, Ill.		8 r; 5700	
Minneapolis-St. Paul Int'l Minn.		5 r; 6500	jf
Mitchel AFB Hempstead, N.Y.	ADC	3 r; 5700; H	GCA; jf
Moody AFB Valdosta, Ga.	ATRC TAC	8 r; 5000; H	
Mountain Home AFB Ida.	SAC INAC	3 r; 10,000; H	
Nellis AFB	ATRC	3 r; 6400; M	GCA; jf

462

SECRET

Newark N.J.	ADC AMC	2 r; 5900	
New Castle AFB Wilmington, Del.	ADC	4 r; 7000	
Niagara Falls Mun. Airpt N.Y.	ADC	5 r; 5500	
Northern Tullahoma, Tenn.		3 r; 5000; V	
Norton AFB San Bernadino, Cal.	AMC ADC	3 r; 7600; H	jf
Offutt AFB Omaha, Nebr.	SAC	3 r; 6100; X	GCA; jf
O'Hare-Chicago Internat'l Chicago, Ill.		4 r; 5800; V	jf
Olmsted AFB Middletown, Pa.		2 r; 5000	jf
Orlando, Mun. #1 Fla.	ADC ?	6 r; 5600; M	
Orlando AFB Fla.	CAC		
Oscoda AFB Mich.	SAC	3 r; 5200; X	jf
Otis AFB Falmouth, Mass.	ADC	2 r; 7000; V	GCA; jf
Oxnard-Ventura County Airpt Cal.		2 r; 4500	
Paine Field Everett, Wash.			
Parks AFB, Camp Parks Pleasanton, Cal.			
Patrick AFB Cocoa, Fla.	ARDC	2 r; 7000; H	jf
Perrin AFB Sherman, Tex.	ATRC	4 r; 5200; M	
Peterson Field Colorado Springs, Colo.	SAC	3 r; 8500	

SECRET

SECRET

Philadelphia International Pa.		4 r; 5400	
Pinecastle AFB Orlando, Fla.	ATRC		
Pope AFB Ft. Bragg, N.C.	TAC	3 r; 5200; V	jf
Portland Mun. Airpt Ore.		4 r; 5400; Y	
Prairie Hill AF Aux. Tex.	ATRC INAC	3 r; 4000; M	
Presque Isle AFB Me.	MATS INAC ADC	3 r; 6800; H	jf
Pulliam AF Aux. Tex.	ATRC	2 r; 4300	
Pyote AFB Tex.	AMC	3 r; 8500; M	
Randolph AFB San Antonio, Tex.	ATRC	3 r; 7000; X	GCA
Rapid City AFB S. Dak.	SAC	2 r; 10,600	GCA;jf
Reese AFB Lubbock, Tex.	ATRC	3 r; 6500; M	jf
Rittenhouse AF Aux. Ariz.	ATRC	4 r; 3700; L	
River AF Aux. Aberdeen, Miss.	ATRC	1 r; 4300	
Robins AFB Macon, Ga.	AMC	3 r; 7000; H	jf
Rosecrans St. Joseph, Mo.		3 r; 6000	
Sahuarita Flight Strip Ariz.		1 r; 5400	
Salt Lake City #1 Ut.		3 r; 6700	
San Fernando Valley Cal.		3 r; 6000	jf

SECRET

SECRET

San Marcos AFB Tex.	ATRC	4 r; 6300; L	
Scott AFB Belleville, Ill.	ADC ATRC	3 r; 5400; M	jf
Selfield Selma, Ala.		3 r; 4000	
Selfridge AFB Mt. Clemens, Mich.	ADC CAC SAC	2 r; 6000; X	GCA; jf
Sequin AF Aux. Tex.	ATRC	3 r; 5400; M	
Sewart AFB Smyrna, Tenn.	TAC	2 r; 5500; V	jf
Shaw AFB Sumter, S. C.	TAC	5 r; 6800; H	GCA; jf
Sheppard AFB Wichita Falls, Tex.	ATRC	L	
Sherman AFB Ft. Leavenworth, Kan.	TAC	2 r; 6000; L	
Silver Lake AFB Wash.	ADC		
Sioux City Ia.	ADC	3 r; 6900	
Sioux Falls S. Dak.	ADC	3 r; 5700	
Smoky Hill AFB Salina, Kan.		4 r; 10,000; H	
Spence AFB Moultrie, Ga.	ATRC	4 r; 5000	
Standiford Ky.		3 r; 5000; V	
Starkville AF Aux. Miss.			
Stead AFB Reno, Nev.	SAC	3 r; 8000	
Stew[illegible] Newburgh, N.Y.	[illegible] TAC	[illegible] 6000 [illegible]	[illegible]

SECRET

465

SECRET

Suffolk County Airpt Westhampton Beach, N.Y.	ADC	3 r; 5000	
Tinker AFB Oklahoma City, Okla.	ADC AMC	3 r; 7800; V	GCA; jf
Travis AFB Fairfield, Cal.	MATS	2 r; 8100; Z	GCA; jf; instr. landing system
Truax Madison, Wis.			
Turner AFB Albany, Ga.	TAC SAC	3 r; 7600; M	jf
Tyndall AFB Panama City, Fla.	ATRC	4 r; 6100; H	GCA; jf
Vance AFB Enid, Okla.		4 r; 5500; H	
Vaughn AF Aux. Columbus, Miss.		1 r; 4000	
Walker AFB Roswell, N. Mex.	SAC	5 r; 8590; H	GCA; jf
Warren AFB Cheyenne, Wyo. ?	ATRC		
Washington National Washington, D.C.	MATS	4 r; 6700; V	
Westover AFB Chicopee Falls, Mass.	ADC MATS	3 r; 7300; H	GCA; jf; instr. landing system
Wichita AFB Kan.		5 r; 10,000	jf
Will Rogers Oklahoma City, Okla.		4 r; 5100	
Williams AFB Chandler, Ariz.	ATRC	3 r; 6100; M	jf
Williams AF Aux. #1 Ajo, Ariz.	ATRC	3 r; 3700; H	
Williams AF Aux. #2 Ajo, Ariz.	ATRC	3 r; 3700; L	
Williams AF Aux. #3 Ajo, Ariz.	ATRC	3 r; 3700; L	

SECRET

SECRET

466

Williams AF Aux. #4 Gila Bend, Ariz.	ATRC	3 r; 3700; H	
Williams AF Aux. #5 Gila Bend, Ariz.	ATRC	3 r; 3700; M	
Williams AF Aux. #6 Gila Bend, Ariz.	ATRC	3 r; 3700; M	
Wold-Chamberlain Minneapolis, Minn.	ADC		
Woodring Enid, Okla.	ATRC	3 r; 6500; M	
Wright-Patterson AFB Dayton, O.	AMC	3 r; 8000; Z	GCA; jf
Youngstown Mun. Airpt Ohio			
Zuehl AF Aux. Marion, Tex.	ATRC	2 r; 3000; L	

SECRET

467

TABLE II

AIR FORCE BASES (ZONE OF INTERIOR) SCHEDULED TO BE ACTIVATED BEFORE 30 JUNE 1952

Altus Municipal Airport	Altus, Okla.
Ardmore " "	Ardmore, Okla.
Charleston " "	Charleston, S. C.
Foster Field	Victoria, Tex.
Fresno Air Terminal	Fresno, Cal.
Friendship International Airport	Baltimore, Md.
Harlingen Municipal Airport	Harlingen, Tex.
Kinross AF Aux. Field	Kinross, Mich.
Laredo Mun. Airport	Laredo, Tex.
Laughlin AF Aux. Field	Del Rio, Tex.
Lincoln Mun. Airport	Lincoln, Neb.
Miami International Airport	Miami, Fla.
Raleigh-Durham Mun. Airport	N. C.
Sedalia AF Aux. Field	Sedalia, Mo.
West Palm Beach Internat. Airport	W. Palm Beach, Fla.

468

B

OVERSEAS AIRFIELDS

SECRET

469

TABLE III

UNITED STATES AIR FORCE AIR FIELDS, OVERSEAS

NAME	APO	COMMAND	REMARKS
	Pacific		
Hickham AFB Terr. Hawaii	APO 953, SF		
Johnston Island AFB			Pacific
Andersen AFB Guam	APO 249	SAC	
Clark AFB Philippines	APO 74, SF APO 719, SF	13th AF	
Kadena AFB Kadena, Okinawa	APO 331, SF	20th AF	
Naha AFB Okinawa	APO 239, SF	20th AF	
Brady AFB Japan	APO 343, SF	FEAF	
Tachikawa Japan	APO 323, SF	FEAF	
Yokota Honshu, Japan	APO 328, SF	FEAF	
Misawa AFB Honshu, Japan			
Haneda Field Honshu, Japan	APO 226, SF	FEAF	
Itazuke Kyushu, Japan	APO 343, SF	FEAF	
Ashiya AFB Kyushu, Japan	APO 343, SF	FEAF	
Johnson AFB Japan	APO 343, SF	FEAF	
Nagoya AB Honshu, Japan	APO 710, SF	FEAF	
Kimpo Airfield Korea	APO 404, SF	FEAF	

SECRET

470

NAME	APO	COMMAND	REMARKS
	Alaska		
Elmendorf AFB Ft. Richardson, Alaska	APO 942, Seattle	ALAC	Hq., Alaska Air Command
Eielson AFB Fairbanks, Alaska	APO 937, Seattle	ALAC	Largest bomber base in Alaska
Ladd Field Alaska	APO 731, Seattle,	ALAC	
Nakeek AFB			
Shemya AFB			
Thornbrough AFB			Air Command Stations in the Aleutian Chain.
Cape AFB			
Amchitka AFB			
	Caribbean		
Albrook AFB Canal Zone	APO 825, New Orleans	Carib. Air Com.	Hq., Caribbean Air Command
	Newfoundland, Labrador, Quebec and the Atlantic		
Pepperell AFB St. Johns, Newfoundland	APO 862, NY	NEAC	Hq. NE Air Command
Earnest Harmon AFB Stephenville, Newfoundland	APO 864, NY	NEAC	
McAndrews AFB Argentia, Newfoundland	APO 836, NY	NEAC	
Goose Bay AFB Labrador	APO 667, NY	NEAC	
Crystal I Ft. Chimo, Quebec			Construction funds appropriated.
Narsarsuak, Greenland			6,500 ft. runway.
Greenland			3 other unnamed bases.
Reykjavik Iceland			
Keflavik			

SECRET

~~SECRET~~

NAME	APO	COMMAND	REMARKS
the Atlantic (cont.)			
Kindley AFB Bermuda	APO 856, NY	MATS	
Lagens AFB Azores	APO 406, NY	MATS	
Europe, Africa, and the Middle East			
Bassingham * Hertfordshire, England			
Bovingdon * Hertfordshire, England			
Brize Norton Oxfordshire, England		3rd AF	A new base.
Chicksand * Bedforshire, England			
Fairford Gloucestershire, England		3rd AF	A new base.
Lakenheath Suffolk, England		3rd AF	
Manston Kent, England		3rd AF	A fighter escort base.
Marham Norfolk, England		3rd AF	
Mildenhall Suffolk		3rd AF	
Newbury* Berkshire, England			
Sculthorpe Norfolk, England		3rd AF	
Upper Heyford Oxfordshire, England		3rd AF	A new base.
Waddington * Lincolnshire, England			
Wyton * Huntingdonshire, England			

* Named in an article in the London Daily Worker, June 12, 1951, but not

4?2

NAME	APO	COMMAND	REMARKS
Europe, Africa, and the Middle East (cont.)			
Wiesbaden Germany	APO 633, NY	12th AF	Hq. 12th AF.
Furstenfeldbruck Bavaria, Germany	APO 208, NY	12th AF	
Landsberg Bavaria, Germany	APO 61, NY	12th AF	Hq. 2nd Air Division
Neuberg Bavaria, Germany		12th AF	
Rhein-Main AFB Frankfort, Germany		12th AF	
Tempelhof AFB Berlin, Germany			
Roberts Field Liberia		MATS	
Cazes Field Casablanca, Fr. Morocco			Being used only temporarily.
Mechra Bel Ksiri, Fr. Morocco			Under construction.
Nouasseur, Fr. Morocco			Under construction.
Rabat, Fr. Morocco		SAC	Hq. 5th Air Div.
Sidi Slimane, Fr. Morocco			Under construction.
Fr. Morocco			2 other unnamed bases.
Wheelus AFB Tripoli		MATS	
Dhahran Air Transport Sta. Saudi Arabia		MATS	

Proposed and in Process

Barcelona, Spain			Proposed
Madrid, "			"
Seville, "			"
Valencia "			

~~SECRET~~

NAME	APO	COMMAND	REMARKS

Proposed and in Process (cont.)

Lugo, Spain			Proposed
Timbaki Field, Crete, Greece			
Herakleion Field, " "			
Kastelli Field " "			
Mytilene, Lesbos, "			
Martisa Field, Rhodes, "			
Mikra Field, Salonika, "			
Sedes Field, " "			
Hellenikon Field, Athens "			
Araxos, Peloponnesus, "			
Nicosia, Cyprus.			

Inactive - Overseas

La Aurora, Guatemala			To be Inactivated.
Barking Sands AFB Terr. Hawaii			To be Declared excess.
Bellows AFB Terr. Hawaii			" " " "
France AFB Canal Zone			To be Inactivated
Howard AFB Canal Zone			To be Turned over to Army
Mingan Canada			To be Inactivated.
Vernam AFB Jamaica			" " "
Waller AFB Trinidad			" " "
Wheeler AFB Terr. Hawaii			" " "

474

SECTION V

WEAPONS

25X4

Next 23 Page(s) In Document Exempt

501

SECTION VI

ELECTRONICS

SECTION VI

ELECTRONICS

INTRODUCTION

At the end of World War II, almost all research and development on radar and other electronic equipment came to an end. For the next two years very little was done. In 1947 technical information on radar was declassified, and research and development began again in ever increasing amounts.

The development, during World War II, of very small radio tubes for use in proximity fuses was widely extended. As a result, electronic equipment designed since World War II, while more flexible and efficient than the equipment it replaces, also is generally smaller and lighter.

At the same time, this equipment is designed as a small number of component units rather than a large number of individual parts. Now, if a radio set fails to function, a dozen or so components are tested, rather than a hundred tubes and an equally large number of resistors, condensers, etc. Due to its small size, it is economical, and of course much quicker, to replace the whole equipment. Maintenance of electronic equipment, which became a major problem toward the end of World War II, has thus been greatly simplified.

As a result of the research and development done since the end of World War II, military electronic equipment has been developed which is of very high quality and variety. We are far ahead of any other country, except possibly for Great Britain, and we seem to lead her by a considerable extent. It should be noted that what we have are refinements of World War II equipments. Radically new devices, if any, have been well concealed.

Production, however, is a different matter. In the summer of 1951,

production of this new electronic equipment was sufficient in most cases to allow its installation in new aircraft, tanks, ships, etc., but not enough to permit refitting of previously constructed units. On the other hand, by the end of 1951, retooling and construction of new factories will be largely completed, and by the end of 1952 large quantities of the new electronic equipment will be available.

NOTE ON SOURCES OF INFORMATION

A large amount of important information came from Congressional hearings on Air Force and Army appropriations. The Navy released very little information in these hearings.

Newspapers and news magazines gave only a small amount of information.

Aviation magazines were the source of the largest amount of information. The most useful of these were:

American Aviation

Aviation Week

Skyways

A moderate amount of information came from trade journals and industrial house organs. The most useful of these were:

Bell Lab Record

Electronics

Tele-Tech

A moderate amount of information came from journals such as:

Air Force

Anti-aircraft Journal

Combat Forces

Ordnance

United States Naval Institute Proceedings.

509

PART I

ELECTRONIC AIDS TO NAVIGATION

305

INSTRUMENT LANDING SYSTEM (ILS)

A transmitter near the end of the runway sends out a narrow beam, along which an aircraft should fly in order to land on the runway. A receiver in the aircraft detects and indicates any deviation, to right or left, or above or below, from this path.

This system is somewhat subject to inaccuracies due to terrain and to atmospheric conditions.

See table A for numbers of ILS systems.

OMNIRANGE (VOR)

A VOR station consists of an unmanned transmitter which radiates two signals. A special airborne receiver compares these signals and indicates the direction from the aircraft to the transmitter. The signal is coded, so that the pilot can tell which station he is listening to.

It is planned to install, by the middle of 1954, about 500 VOR stations. This will be enough so that any point of any major civil air route in the U. S. is within range of at least one station. Numbers now in use and planned for the future are shown in Table A.

VOR transmitters work in the very high frequency (VHF) range, and so are not subject to interference by static. Tests show that errors rarely amount to more than 2 degrees, and this much only in hilly country. VOR signals can be received at 100 miles in an aircraft at 5000 feet, shorter distances at lower heights.

A VOR transmitter, including housing and equipment, cost $65,000 to $70,000 in 1950.

A number of makes of airborne VOR receivers are available. They

506

range in weight from 16 to 24 pounds and cost around $600 in 1950.

Some military aircraft now have VOR equipment, and presumably most new military aircraft are so equipped, but it will be about 6 years before all military aircraft are.

TERMINAL VERY HIGH FREQUENCY OMNIRANGE TVOR)

A VOR system of lower power is under test by the CAA for use at airports. If successful, about 75 will be installed at major airports.

A VOR/DME system of very high precision is being developed by Sperry. It is hoped that with its aid an airport can handle 120 landings per hour.

DISTANCE MEASURING EQUIPMENT (DME)

A VHF signal from an airborne transmitter is received at the DME equipment, which is housed in a VOR tower. When received, another signal is transmitted to the aircraft. Equipment in the aircraft measures the lapse of time, which is a measure of the distance of the aircraft from the VOR tower. The result is indicated on a dial.

Since the airborne equipment includes both a transmitter and a receiver, it weighs 50 pounds, more than twice as much as VOR airborne equipment, and cost over $5,000 in 1950.

Average accuracy with this equipment is about 2/10 of a mile.

An aircraft equipped with both VOR and DME equipment can find its position by contacting one ground station. With VOR equipment only, two stations must be within range for a position fix.

It is planned to install DME equipment at each VOR and ILS station. See Table A for present and planned installations.

The Navy is interested in VOR, DME, and ILS equipment for carriers, but it is not known how far they have gone in installing or testing them.

GROUND CONTROLLED APPROACH SYSTEM (GCA)

This system consists of two radar sets and is placed near an airport runway. One of these, called an Airport Surveillance Radar (ASR) detects all aircraft within a distance of 30 to 40 miles. The information given by the ASR is used for the control of air traffic in the neighborhood of the airport. ASR's of 70 mile range have been installed at the airport in Washington, D.C., and at a few Air Force bases.

The other part of a GCA system is a Precision Approach Radar (PAR). This has a range of 4 to 5 miles. It detects, and displays on one scope, any deviation up or down from the path an aircraft should follow to land on the runway, and on another scope any deviation to the right or left. The distance of the aircraft from the runway is also indicated on both scopes.

Radio communication between the GCA station and the aircraft allows the GCA operator to inform the pilot of his position at any instant, and guides him till he is within a few feet of the ground.

The GCA radars are less subject to atmospheric and terrain disturbances than ILS systems.

Three companies construct GCA systems: Gilfillan, Sperry, and Bendix. The first of these built over 100 sets during World War II, some of which are still in use.

Ground Controlled Approach System (GCA) (Cont.)

Present models fit in one medium size trailer, weigh about 7 tons, and can be operated by one man. They can be transported by plane.

Gilfillan alone is producing 1 GCA system each 48 hours. The cost of a GCA system was well over $200,000 in 1950, and is $400,000 to $525,000 now, depending on the model.

More recent GCA systems are equipped with a Moving Target Indicator (MTI) which eliminates radar echoes from buildings, towers, clouds, etc., and shows on the scope echoes only from moving aircraft.

See Table A. for numbers of ASR and PAR.

AUTOMATIC GROUND CONTROLLED APPROACH SYSTEM (AGCA)

This consists of a GCA system and a computer.

The GCA set tracks the path of an aircraft. This information is fed into the computer. The computer controls, by radio, an auto-pilot in the aircraft, which maneuvers the aircraft so as to stay on, or return to, the correct path for a landing.

The whole process is automatic.

An AGCA system which can handle six aircraft at once is being evaluated by the Air Force.

Another system, which can handle three aircraft at once, creates an artificial glide path by actuating the ILS indicator as would an actual ILS beam. This system is being used by the Air Force.

AIRPORT SURFACE DETECTION EQUIPMENT (ASDE)

This is a radar set which surveys the airport, showing, even in fog and rain, any aircraft on and adjacent to the runways.

These cost $200,000 apiece in 1950.

509

AUTOMATIC DIRECTION FINDER (ADF)

A signal from a VHF transmitter in an aircraft is used to find the direction of the aircraft from an airport. The information is displayed on the scope of an Airport Surveillance Radar and communicated to the pilot by radio. There are ADF installations at 53 Air Force bases.

These cost about $10,000 each for the ground equipment. No extra airborne equipment is needed.

COURSE LINE COMPUTERS

These are airborne equipments which use the information obtained from VOR and DME stations.

In one system under development in 1950, and probably being produced now, the desired course is fed into the computer by setting a dial. The computer then actuates an indicator needle, and it is only necessary to fly the aircraft so as to keep the needle centered in order to follow the desired course.

Another computer, also under development in 1950 and scheduled for production this year, displays the course followed by the aircraft on a map of the region around a VOR/DME station. A pencil can be inserted in a pointer to draw a trace on the map of the course which the aircraft has followed. This should be especially useful to pilots of fighter aircraft, who do not have much time for navigation.

ALTIMETERS

No information except that refinements of wartime electronic models have been developed.

510

AUTO PILOTS

An autopilot, model F-5, for jet fighters is made by Lear. This is probably essentially the same as its model L-2 for small aircraft. The latter weighs 30 pounds and costs $3,000. The F-5 is now in production. Lear has a contract for over $3,000,000 with the Air Force for this item.

Sperry's model A-12 autopilot is designed for use in heavy aircraft under all weather conditions. It probably weighs around 100 pounds. It is in production.

Westinghouse has developed an autopilot for jet fighters specifically designed to give unlimited maneuverability. It is being installed in the F-94-C.

This autopilot can also be used, with radio control, in guided missiles.

Bendix makes a model PB-10 autopilot, but no other information on it was found.

Minneapolis-Honeywell makes a model E-6 autopilot for heavy aircraft. An experimental model weighed 140 pounds.

Both the Sperry A-12 and the Minneapolis-Honeywell E-6 have been adapted to helicopters. Experimental models have undergone tests successfully. The former has also been adapted to blimps.

AUTOMATIC APPROACH COUPLER

This is an airborne computer which receives information from the ILS beam and automatically directs the autopilot so that the aircraft follows the correct path to the runway. These devices will bring an aircraft to within a few feet of the ground, at which point the pilot

takes over for the actual landing.

Lear, Sperry and Bendix are all producing these. They are now being used in our all-weather interceptors, but no other information on production was found.

RADAR BEACONS

The Coast Guard has four new radar beacons in operation and four more on order. A radar beacon (Ramark) is a continuously operating radar transmitter. It gives a strong signal on a marine search radar scope, and thus allows the bearing of the ship from the beacon to be determined accurately and at a considerable distance.

The new model, TB-140, has better frequency stabilization than previous, probably WW II, models and operates unattended.

Another type of radar beacon, which transmits a coded signal when queried by an airborne search radar, is called a Racon. These have been installed at 84 Air Force bases and Navy Air Stations in the U.S., and it is possible to fly coast-to-coast using these beacons instead of VOR stations for direction finders.

During WW II many of our aircraft carriers had Racons, and presumably the same is still true.

A radar set known as IFF (Identification, Friend or Foe), developed and used in WW II, is about the same thing as an airborne Racon. It is still in use. (See FIRE CONTROL SYSTEMS, Skysweeper).

RADAR REFLECTORS

This is a device geometrically constructed so as to reflect back, in the same direction from which it came, any radar signal which hits

it. It thus gives a strong echo and shows up clearly on a radar scope. The Coast Guard is experimenting with various types of these reflectors for installation on harbor buoys.

SEARCH RADAR

Airborne and marine search radars have a number of navigational uses, discussed below.

The standard airborne search radar at the end of the last war was model AN/APS-10. This weighed, installed, about 200 pounds. A number of improved models have been announced.

Allison manufactures a lightweight (63 pound) unit, models E-2, ES-2, and ESB-2. At 10,000 feet, this set can see cities at 40 miles, mountains at 80, heavy aircraft at 25 miles, and light aircraft at 5. The ESB-2 model can be used to receive signals from radar beacons. This model was being evaluated by the Coast Guard in 1950.

Houston makes a model AN/APS-42, weighing 173 pounds. In August 1950 the Navy had 218 of these on order and the Air Force 113.

Westinghouse has developed a search radar set and has an $8,500,000 contract for it.

Specifications for a model AN/APN-59, for navigational purposes, have been drawn up, and three prototypes are being built.

Virtually no other specific information of airborne search radar sets is available. The Radiomarine Corp. has manufactured 1250 commercial shipboard search radar sets. These have a range of 75 yards to 40 miles.

For navigational purposes, airborne search radar is used in four

ways. It gives a rough but useable picture of the ground in the vicinity of the aircraft. This is sometimes sufficient to establish the location of the aircraft. With the proper accessories, it can detect the signals from radar beacons. It can also be used to detect thunderstorms. Finally, it detects, even at night or through clouds, nearby aircraft.

Shipborne search radar is used in much the same way. In addition, there are five installations of shore-based search radars at harbors. Using one of these, the operator can locate and follow the movements of all ships in the harbor. Appropriate warnings and instructions are sent to the ships by radio.

For navigation close to a shore, a device has been developed which throws the image of a map of the shore line on the radar scope. The image can be moved until it best matches the picture on the scope. The position of the ship can thus be located on the map.

CONTOUR BOTTOM SCANNER

This device projects a narrow beam of high energy sound waves through the water from the bottom of a ship. The length of time for the echo to return is a measure of the depth of the water. The beam is rotated from side to side, thus giving a cross-sectional picture of the bottom, about 50 degrees on each side.

Model AN/SQN-1 is being produced by the Edo Corporation.

WEATHER DETECTION

Search radars, airborne or on the ground, used by an experienced operator, can detect thunderstorms or cumulus clouds at great distances,

so that a pilot can avoid them. There are radars designed for this purpose at 44 Air Force bases in this country and at 4 civil airports.

The RAWIN GMD-1 radar set is an automatic tracking and printing direction finder. It follows the ascent of balloons to obtain meteorological data, chiefly, however, for artillery purposes. This set is under production.

The "Grasshopper", a device developed in WW II but not used then, has been further developed. This is a small radio transmitter which can be dropped by parachute. After a pre-determined time, it extends its collapsible legs, erects an antenna, and begins to transmit weather information. Another obvious use for this device is as a beacon for bombers.

LORAN

Loran is the standard electronic aid to long range marine navigation and to navigation of aircraft over water.

A Loran station consists of two transmitters, located 200-400 miles apart. A pulsed radio signal is sent out from one transmitter. When it reaches the second transmitter, the latter sends out another pulsed signal. A receiver in a ship or aircraft, by comparing the two signals, indicates which of a family of hyperbolic lines it is on. By receiving signals from two stations, its location can be found with a maximum error of about 5 miles. A Loran reading can be taken in 2 to 3 minutes.

To facilitate use of Loran, charts are prepared with the hyperbolic lines for each station drawn on the charts.

A Loran station cost about $1,000,000 to install in 1950. It takes

Loran (Cont.)

515

12 to 14 men to operate one station.

In 1950 we had 30 Loran stations located along the East and West coasts. Other stations abroad or newly installed are sufficient for coverage of the North Atlantic and North Pacific, including Alaska. More stations are being added to cover the Gulf of Mexico approaches to the Panama Canal.

Loran reception is satisfactory over water up to 750 miles in the daytime and 1500 miles at night. It is little affected by weather conditions. Reception over land is poor.

An airborne Loran receiver weighs about 35 pounds, and lighter receivers are being developed. Sperry has developed and produced a ship borne receiver which is smaller and lighter than WW II models and is much easier to read.

OTHER LONG RANGE NAVIGATIONAL AIDS

Three systems are under development or evaluation.

There is one experimental Naviglobe station. A low frequency radio signal is used to give the bearing of the station from the aircraft. The useable range is expected to be about 1,500 miles, with a maximum of about one degree.

Consol is being evaluated by the Air Force. It has a range of 2500-3000 miles with good accuracy. It requires no extra equipment in the aircraft as it uses standard radio equipment. It yields both range and bearing.

Radux is being developed by the Navy. It has a range of 2,000 to 2,500 miles with an expected error of about 5 miles. The airborne equipment weighs about 100 pounds.

SHORAN

516

A Shoran station consists of two ground units located some miles apart. A pulsed signal is sent out from a transmitter in an aircraft. When it reaches a ground unit, another, coded, signal is returned. Comparing the times of arrival of the two return signals, the airborne unit indicates on which of a family of hyperbolic lines the aircraft is located. By using two stations, the location of the aircraft can be determined.

These transmitters operate at VHF, so are not affected by weather conditions, and are effective over land. On the other hand, the range is reduced to around 200 miles. The system is accurate to within 50 feet at this distance.

No information is available as to the number of Shoran systems in operation or being produced. It is now in use in Korea.

RAYDIST

A Raydist system consists of two transmitters, one fixed, on the ground, and one carried in an aircraft, and a number of receivers located on the ground.

This system has about the same accuracy as a Shoran system, but the units are lighter and easily moved. The present range is about 50 miles, but can probably be extended to around 150.

Raydist is being evaluated by the Navy and by the Air Force.

577

TABLE A

ELECTRONIC AIDS TO NAVIGATION

Installed and operated by CAA:

	Sept. 1950	April 1951	Planned for end of fiscal 1952 or sooner
ILS	99	127	190
VOR	271	400	459
DME	---	7	640*
ASR	4	49	70 **
PAR	4	22	44
ASDE	---	---	5

*450 DME on order in March 1950. Production at rate of 40 per month by June 1951. Delivery complete early in 1952. 190 more ordered late in 1950.

**Two of these to be installed in Alaska and one at Honolulu.

OPERATED BY MILITARY IN 1951

ILS	at least 3
VOR	60
GCA	over 150 *

* 39 of these operated by the Navy, 9 of them outside of the U.S., and at least 12 more on order. 97 at Air Force bases in the U.S.

518

PART II

OTHER ELECTRONIC DEVICES

Aids to Civil Defense

Anti-Submarine Warfare

Bomb Sights and Blind Bombing

Communications Equipment

Computers

Counter Measures and Counter Counter Measures

Fire Control Systems

Mine Detectors

Mortar Ranging

Radar Warning Net

Remote Flight Control

Search and Rescue

Sniperscope

Training Devices

319

AIDS TO CIVIL DEFENSE

Some planning has been done on the problem of communications for civil defense, but these plans have not advanced sufficiently to result in much production of necessary devices.

Much of the communications burden is to be turned over to amateur radio operators.

A system for alerting police and fire departments, hospitals, etc. has been developed. Subaudible signals will be broadcast over local radio stations and will actuate alarms attached to ordinary receivers at these places. The design of these alarm systems is complete, but none have been produced.

ANTI-SUBMARINE WARFARE

There has been a tremendous amount of research and development, but no specific information is available.

The WW II devices, radar, sonar, magnetic airborne detectors, and sonobuoys, have all been improved. There are a few hints of new devices.

BOMB SIGHTS AND BLIND BOMBING

For use in heavy bombers, the Air Force has a K-1 bomb aiming system. This contains both radar and optical elements and a computer, and is used for bombing in any weather and at altitudes up to 50,000 feet. It is used in the B-36, B-47 and B-52.

The cost of this bomb aiming system is $250,000. (The Norden bombsight used in WW II cost $2,500.)

For bombing at night or through overcast, Shoran is used at distances up [illegible] 200 [illegible]mber,

520

determined by the Shoran apparatus, is fed into a computer which also takes account of wind velocity, altitude, etc., and indicates when the bombs should be dropped. A modification of this system, now being used in Korea, uses an AN/MSQ-1 computer which remains on the ground. It sends flight instructions to the pilot and releases the bombs automatically at the proper time.

COMMUNICATIONS EQUIPMENT

In the matter of long distance communications, there is little specific information available.

The Air Force has 20,000 miles of private 4-wire telephone lines which form a military flight service network for the U.S. This network is used to coordinate and control movements of military aircraft. The CAA has a parallel system, and the two are tied together at appropriate points.

Increased facilities are being installed in Alaska, and presumably elsewhere, to meet air alert requirements. It is claimed that facilities are such that the Pentagon can be in direct 2-way communication with any U.S. bomber group at any time.

1951 is the third year of a five-year program devoted to modernizing and extending the world-wide communications system of the Air Force. Most of the equipment will be delivered by the end of the current year, but it will take another two years to complete installations.

There are two recent non-military installations which could be made available to the military if necessary. Pan American Airlines has just finished installing a radio network which permits voice communication from any of its bases with any of its planes on any of its routes.

521

In this country, a chain of micro-wave relay stations, reaching from New York to San Francisco and Los Angeles, has been completed. This chain can carry several hundred telephone conversations at once.

It is possible for the Pentagon to carry on three simultaneous telecon conferences with Field Headquarters.

There is more information available concerning short distance communications. A program is underway to switch to ultra high frequencies (UHF) all air-to-ground and air-to-air communications by the Navy, Air Force, and CAA. This will eliminate atmospheric disturbances and will make available more frequencies. The program is scheduled for completion in January 1953. 125 CAA stations are already so equipped. A combination transmitter and receiver, AN/ARC-27, is being produced. It covers 1,000 channels and is pressurized to eliminate arcing at high altitudes. During the summer of 1951, production became large enough to allow all new aircraft to be fitted with UHF communication equipment. Older aircraft will continue with VHF equipment, of WW II type, until production can be increased.

For the Army, the Signal Corp has developed an integrated and flexible group of more than 30 radios, teletype equipments, and switchboards. In general lighter and smaller than the equipment they replace, these have greater range and flexibility, and are easier to maintain.

Among them is a portable teletypewriter, weighing 45 pounds, against 225 for its predecessor, which can operate on both wire and radio circuits, and so can be used by paratroops, for example.

The AN/GRC-7 radio is typical of these new equipments. This set consists of two receivers, so that two frequencies can be monitored at once. It also contains [illegible]

523

transmitter and of the two receivers is 10-15 miles. All three are tunable over the whole assigned frequency band, while the SCR-508, which it replaces, could use only selected frequencies in this band. Provision is made for automatic rebroadcasting, on a different frequency, of a signal received through either of the receivers. Thus the unit can be made part of chains of units to give a greater range. The second transmitter, with a range of one mile, is used for communication with the new "handie-talkie" and other nearby GRC/7's.

This radio matches in frequency the new "walkie-talkie", the AN/PRC-10, which replaces the SCR-300. The PRC-10 weighs about 20 pounds, less than half the weight of its predecessor, and has a range of 3-5 miles. This radio was the first of this new equipment to be put into production, and started coming off the production lines in quantity in the spring of 1951. The cost of this radio, $265 in 1950, has now increased to $425.

All the other units developed by the Signal Corps are either being readied for production or are under production now.

Among other items under development are a new field wire, half the weight of the wire now in use, a new field telephone, and a TV "walkie-talkie" which will allow 2-way aural and visual communication.

The Air Force has developed a new and much improved intercom system for large aircraft.

Despite these developments in short range communications, which augur well for the near future, the present situation is not satisfactory. At the start of hostilities in Korea, all signal equipment was of WW II design, and only recently has the new equipment begun to appear. Anti-aircraft battalions in particular complained of the non-durability

and inconvenience of the old equipment. In recent large-scale exercises, in the Caribbean area and in Western Europe, a need for better communication was apparent. In the former, communications caused more difficulty than any other item, and in particular proved to be very susceptible to jamming.

COMPUTERS

Although not weapons, high-speed electronic computers are an important part of our military program.

Many problems arising in aircraft design, construction of firing tables, etc., lead to very long numerical calculations. Our possession of a number of high-speed digital computers is thus a considerable asset, although a long-term rather than a short-term one.

Other types of problems can be solved with the aid of analogue computers. For example, the effect on the performance of a guided missile caused by changes in the dimension of a particular component can be predicted by an analogue computer. This is of course much quicker and cheaper than actually building missiles with various sizes of this component and testing each one.

A number of analogue computers have been built for guided missile work by Boeing, Reeves Instrument Corp., RCA Laboratories, M.I.T., California Institute of Technology, etc.

Another use for high-speed computers has been found by the Air Force, which uses one for budgeting and requirements work.

COUNTER MEASURES AND COUNTER COUNTER MEASURES

Although there has evidently been much research along these lines, little information about results is available.

A point which is a poor [illegible]

A device has been developed for prematurely exploding a VT fuse. This will reach service testing in 1952.

Large quantities of radar jamming equipment were left over at the end of WW II. A recent report claims that Russia is now installing large quantities of search and warning radars of German WW II type, against which our jamming equipment would be very effective.

It was learned in WW II that the most effective counter countermeasure was a well-trained radar operator. In this connection, see TRAINING DEVICES, 3.

FIRE CONTROL SYSTEMS

The SCR-584 tracking radar and the M-9 computer were the fire control equipment for anti-aircraft use at the end of WW II. The success of this combination is well known. Until 1950, although there was some research and development work, there was little construction of new equipment. A recent picture (Life, Jan. 22, 1951) shows an AA battery with WW II equipment.

Early in 1951, Western Electric had a $137,000,000 contract for production of an anti-aircraft fire control system developed by Bell Laboratories. This system is a refinement and integration of the SCR-584 and M-9. It collects and uses more information on the hostile aircraft, and is more accurate. It was designed with the newer high speed aircraft in mind.

The entire equipment fits inside a van about the size of the one used for the SCR-584 and is light enough to be carried by air. It can direct both 90 and 120 mm. guns.

Another fire control system, "Skysweeper" is designed for 75 mm. guns, which are to replace the 40 mm. anti-aircraft guns used in WW II. This has a built-in radar device which prevents firing against friendly targets. It can also be used against tanks.

In 1950, the Army had 6 of these and planned to order over 300 more.

At the end of WW II, satisfactory airborne fire control systems had not been achieved. However, a necessary preliminary step had been taken in that a device had been constructed for testing the accuracy of proposed systems. The construction of a similar device for ground-based fire control systems led rather quickly to the M-9 computer. Since research on airborne systems was continued without interruption after the end of WW II, there is a high probability that an airborne computer as effective as the M-9 has been developed.

In any case, the B-36 and B-50 are now equipped with centralized fire control systems in which a tracking radar follows an attacking aircraft and an automatic computer, taking into account air speed, drift, altitude, etc. and the track of the attacker, computes the aiming point and fires the guns automatically.

Both General Electric and Westinghouse manufacture these fire control systems.

For further evidence of the extensive use of such systems in heavy bombers, see TRAINING DEVICES, 1.

For fighters, Sperry manufactures an A-12 gunsight. This device throws a small circle of light on the windshield. The pilot manoeuvers to keep his target within this circle. As long as he does so, his guns are pointed in the right direction.

526

Plans are being developed for coupling this device with an autopilot, so that the whole operation will be automatic.

The all-weather interceptors F-94 and F-89A can be fitted with a completely automatic fire control system which tracks the target, controls the autopilot, and fires the guns at the proper time.

For the training of pilots of these aircraft, a rigid glider target, X-27A, is used.

At the beginning of WW II, Navy ships were equipped with M-3 and M-4 fire control systems. During the war improved systems were designed, and by the end of the war about half the original equipment had been replaced. Since then, further improvements have been made, but no details are available.

One such improvement is equipment, now being produced, which connects a search radar with the tracking radar of an antiaircraft fire control system. When an enemy aircraft is detected by the search radar, it automatically points the tracking radar at it when it comes within range.

Bell Telephone Laboratories have developed a computer for ground-to-air guided missiles. It receives information from a tracking radar, such as the SCR-584, computes the proper course for the missile, guides it by radio, and explodes it at the proper instant.

MINE DETECTORS

A new model, AN PRS-3, which will detect metallic mines at a depth of three feet, against one foot for WW II models, and in any kind of soil, has been developed. This will also operate under water. This item costs about $5,000. About 400 have been ordered.

MORTAR RANGING

Model AN/AMPQ-10 mortar-ranging radar is under production. It will be standard equipment for 105 mm. howitzer battalions. This set is used to locate enemy mortar batteries by tracking their projectiles.

New, simplified techniques for using this and other radar equipment have been developed.

A search radar is also designed for locating enemy artillery.

RADAR WARNING NET

This consists of a chain of radar stations for the detection of enemy aircraft. These stations are located along the East and West coasts, in Alaska and along the polar frontier of Canada. A recent agreement with Denmark will allow further stations in Greenland. In addition, three critical areas in the U.S. are protected by a second, inner chain. These are the Pacific Northwest, the Great Lakes area, and the Northeast. Finally, Navy picket ships extend this chain out to sea. It is planned to have all installations completed and operating by November, 1951.

A total of $160,750,000 has been appropriated for this warning net. This money has been used as follows:

Land construction	$85,500,000
Electronic equipment	68,250,000
4 Navy picket ships	7,000,000

The expenditure for electronic equipment falls into 2 parts:

To the Air Force for WW II equipment	$42,250,000
For new equipment	26,000,000

528

Presumably, most of the WW II equipment went into the inner chain, which was put into operation in 1950. Of the $85,500,000 for construction, at least $30,000,000 and probably more, was for installations in Alaska.

Known locations of warning stations are Roslyn, N.Y.; Sandy Hook; Murphy Dome and Fire Island, Alaska; Iowa; Wisconsin and Minnesota. The West Coast was covered as far down as North Bend, Ore., in 1950, and the East Coast as far down as Norfolk, Va.

A radar warning station is a very large affair. The electronic equipment for one of the new stations occupied 50 freight cars. A rubber dome to protect the antennae in the Arctic is 37 feet high and 54 feet in diameter. Estimates of the number of men needed to operate a station range from 100 to 400. Presumably the smaller figure is for a station using WW II equipment. A total of 25,000 men is now on duty operating the warning net, though this figure may include the personnel of the Ground Control Intercept stations and the Air Defense Control Centers.

The maximum range of a warning station is 100 miles for WW II equipment and 150 miles for the new equipment. At extreme range only high altitude aircraft can be detected, since the radar beam follows almost a straight line.

The new electronic equipment for a warning station costs $1,600,000 for the first few units.

On the basis of the information above, it is possible to make an estimate of the effectiveness of this warning net. Assuming that the electronic equipment cost $1,600,000 for each of the first five units, and that thereafter the cost dropped to $1,000,000 (this is in line with experience with other electronic equipment) the $26,000,000 for new

equipment would give 23 stations for the outer chain. The range of each station being 150 miles on each side, these 23 stations would form a chain 6,900 miles long. The total distance, along the West Coast, through Northern Canada, and down the East Coast, is about 8,000 miles. Thus about 85 per cent of this is covered.

If all the electronic units cost $1,600,000, 16 would be available, which would cover 60 per cent of the 8,000 miles.

Note, however, that this coverage is for high altitude aircraft only. Additional units would be necessary to catch low-flying aircraft at the points midway between stations.

A widely quoted estimate of the cost of complete coverage is $5,000,000,000. This seems to be in error. Assuming that $26,000,000 would procure only 16 units and that all the $85,000,000 was used for construction at these stations, then a complete double ring of stations, spaced only 200 miles apart, would cost a little more than $500,000,000, one tenth of the estimate.

Future developments lie in two directions. Even larger radar sets, with a range of 200 miles or more, are under development. More picket ships will be added. The Navy is planning to convert twelve destroyers and four submarines to this use. In addition a PO-1W radar picket plane is under test.

REMOTE FLIGHT CONTROL.

A new remote flight control system was developed in 1950 by Lear and Philco. This utilizes two television cameras in the controlled aircraft, one to show the horizon and one the instrument panel. There are two control stations. One is on the ground and controls take-offs and landings. The other is in a mother aircraft. Control can be switched

530

The controlled aircraft uses a Lear model F-5 autopilot, but individual controls can be actuated if desired.

One use of this system is for dangerous flight tests.

Three of these units are to be delivered to the Air Force in 1951.

SEARCH AND RESCUE.

A Crash Locator Beacon has been developed by the Air Force. Carried in the tail of an aircraft, it is thrown out and goes into operation automatically after a crash and provides a homing beacon for search planes. It will also operate under water. It weighs 50 pounds. This is not yet in production.

A new Distress Radio, to replace the "Gibson Girl," has been developed. It weighs only 6 pounds, against 35 pounds for its predecessor, works at very high and ultra high frequencies, and has a range of 80 miles.

The Air Force rescue boat, A-3, will be equipped with radio controls so that the pilot of the rescue plane can direct the boat, after it has been dropped, to the proper location. All A-3's will be so equipped by early 1952.

SNIPERSCOPE

An improved sniperscope is in quantity production and is being used in Korea. A sniperscope consists of a searchlight which emits invisible infra-red rays and a device which makes visible, in a small telescope mounted on a rifle, the reflected rays. It thus allows the detection at night of objects up to 75 yards away without any indication to the enemy.

TRAINING DEVICES

In addition to the famous Link trainer, and its counterpart for the ground training of jet pilots, there are a number of devices for training operators of electronic devices. The Air Force now has over 750 of these, and the current budget allows for another 250. The Navy also uses some of these trainers, but no estimate of numbers is available.

1. A gun-laying trainer, to train heavy bomber crews in the operation of fire control systems. There are on hand about 35 of these.

2. A bombing trainer, to train bombardiers of heavy bombers in the use of the K-1 bomb-aiming system. There are 173 allowed for in the current budget.

3. A radar jamming kit, attached to the K-1 training device, to train operators in the use of this system in the face of enemy countermeasures. There are on hand about 60.

4. An interceptor mission trainer. This is used to train pilots and radar operators of all-weather interceptors. There are on hand about 28 of these. Ultimately each all-weather interceptor squadron will have one of these trainers.

5. A navigation trainer, to train pilots and navigators in the use of VOR/DME, ILS, and GCA equipment. There are on hand about 110 of these.

6. A Loran trainer. There are on hand about 50 of these.

7. A Shoran trainer.

25X1

Next 96 Page(s) In Document Exempt

Approved For Release 2004/07/28 : CIA-RDP79R00971A000300020002-0